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ARCHITECTURE AND THE HISTORIC IMAGINATION.

A RECENT bequest of £10,000, "to be devoted to the building of a church in the Renaissance style in some poor neighbourhood, the dedication to be 'Our Lady of Mercy and St. Thomas of Canterbury,'" suggests a curious train of thought. The first impulse of the reader probably is, How incongruous is this mixture of Renaissance art with a mediæval dedication! But a moment's consideration will show that the seeming incongruity is in fact a true effort of historical imagination. The Virgin and Thomas à Becket have had a far larger share in English history and literature at every period than many saints more orthodox in modern eyes, St. Simon and St. Jude, for instance. The Reformation broke through their spell by pillaging the shrine of the one and breaking the images of the other, so that, by the time the Renaissance was seriously affecting England, they had ceased to play their former part, officially at least. New churches dedicated to St. Mary are not frequent between the sixteenth and nineteenth centuries; those dedicated to St. Thomas à Becket must be rare indeed. Yet the time of the English Renaissance—a term which may roughly be taken to include the century from the dissolution of the monasteries to the opening of the Long Parliament—was one in which Becket was daily remembered in the pages of Chaucer's *Canterbury Tales*, one of the most popular and influential books of the period; while it became so far possible to dissociate the name of the Virgin from Popery that Laud could venture to erect the famous statue of St. Mary the Virgin at Oxford without any prophetic vision of the scaffold to which this very statue was to be one of the steps.

That Renaissance architecture is not essentially unchristian, as the last generation commonly held, is a theory put forward in several recent numbers of the *Builder;* here at last is a benefactor who dares to act up to this belief, and to order "a Renaissance church in a poor quarter." And this suggests another line of thought: How far is the shifting standpoint of successive generations truly reflected in art and architecture? Again, cannot that which to one period is romantic come to appear to another period barren, academic, classical, according to the cant of the moment? A century ago the average Englishman cherished a passion for Corsairs and the Dark Ages; yet this did not prevent the prevalence of pseudo-Greek temples for Protestant worship or of whole acres of classical subjects in every picture gallery. Romance had not yet invaded the province of art, except, indeed, in literature, notably in the novels of Mrs. Radcliffe and her school, in which the picturesque side of mediæval religion, its processions, its monks, and its invariably gloomy chapels, was a valuable asset; and only a knowledge of the subject pictures of the period can fully explain the need of the Pre-Raphaelite reaction. To us, on the other hand, the literature of the Gothic revival (much of Scott, of course, excepted) is not romantic, any more than the churches of the period are Greek. Romance has retreated for us into times of which we know less than we do of the Middle Ages, just as the "noble savage" has disappeared before our knowledge of taboo, and primitive man has ceased to be an object of envy to his civilised descendants.

In architecture, as elsewhere, the prevalence of simplicity and even rusticity of style may betoken not simplicity but complexity, a desire to escape from civilisation, not an absence of it. We are right in assuming that the simple English farms and cottages of the sixteenth and seventeenth centuries are what they appear to be, the homes of labourers and yeomen, because we know from literature that the Simple Life was not practised at the period, that farmers were farmers and courtiers courtiers; but we should make a great mistake in assuming that the farms and villas within twenty miles of Rome were necessarily what they appeared to be. The Sabine farm was, externally at least, like other Roman farms; but we may be sure that its living-room was more of a study than a kitchen, and that Mæcenas, though he drank cheap wine at Horace's expense, drank it out of a shapely cup. Architecture alone, that is, could not supply us with the key to the civilisation of the Augustan age; it must be supplemented by literature if we are to form a true idea of the standpoint of Horace's generation.

So, too, in England the "rural cot" is the invention of a self-conscious civilisation, and as in the case of Augustan Rome assumed simplicity in private life goes hand-in-hand with a passion for stately and academic public buildings which are apt to produce that sense of impatience in the next generation which is one main cause of the eternal reaction from an established Classicism to an invading Romanticism. Literature is apt to lead the way and art to follow, until in course of time an established Romanticism gives way in its turn to an invading Classicism, and the Gothic in art and literature—using the word in its widest sense—becomes a weariness of the flesh. So the "Renaissance church in a poor quarter," which is our present text, succeeds a long series of Gothic buildings, as Palladian formerly succeeded Perpendicular, as plays observing all the unities of time, place, and action succeeded the licence of Elizabethan drama, as the reign of Robespierre displaced the Trianon. Even so the architecture of Wren and Vanbrugh followed on the reign of the Classicism brought from France at the Restoration, and though, as often happens, the previous age prophesied of its successor, the Ionic portico erected on the west front of St. Paul's by Inigo Jones in 1633 was a solitary swallow, and the summer of classical architecture in England was still to come.

It is difficult, no doubt, at the time to distinguish originality from its imitator novelty, to determine whether a man is leading a great artistic and literary revival, or producing a work which is merely startling from its rebellion against all accepted rules of taste; only a brief experience, however, is needed to distinguish the true from the false, to send Gongorism and Pindarics in literature, Cubism and Futurism in art, down the gulf of time; perhaps one test only can be always applied with success—that of a true reverence for the greatness of someone or something in the past. Contempt for every predecessor is the sure and certain work of the sciolist whose kingdom shall not stand—this, and not that fear of apparent incongruity which has marred the work of the second-rate from the beginning.

If we turn to the architecture of to-day we shall see that these rules are illustrated in many ways. The belief that Gothic is a religious, Renaissance a secular style is still held and still acted upon, but the leaders of thought to-day have got beyond it, and in another fifty years popular opinion may reflect their standpoint. A platitude truly, but in practice we are too apt to forget the doctrine of the Evolution of Taste, and to judge a period too exclusively by its artistic achievements, regardless of the fact that these probably reflect an attitude that has been given up by the wise in their generation for half a century.

How, then, may we know these elect? How be sure that their kingdom will stand? One thing is certain—a rigid regard for consistency is never the mark of the chosen. Slowly but surely the definition of vandalism is widening, till it includes not only the "barbarous" eighteenth-century rector, who whitewashed the frescoed walls of churches and superimposed a barrel-vault of plaster on a carved open roof, but the nineteenth-century Goth, who found everything Georgian irreligious.

When Miss Yonge, in "The Daisy Chain," wished to represent a really reverent and enthusiastic scholar, artist, and Churchman coming into a position of authority, his first "right and necessary" act is the removal of all galleries, square-headed pews, marble clouds, and angels' heads from the Gothic Minster; such an act seems to us to-day to be flagrantly Philistine, the act of an ignorant churchwarden, not of an educated man with a reverence for the past. The romantic love of Gothic which belonged to Miss Yonge as to other disciples of the Oxford movement, to the exclusion of all other styles, has become barren and void of life; where in 1854 the novelist creates a Gothic church with its pierced spire dedicated to St. Andrew, to stir and elevate a squalid neighbourhood, the lady dying in 1914 wills the erection of a Renaissance church, whose fittings are to include a "baldacchino of masonry," and which—with a bold assertion of the historical continuity of the Church of England—is to be dedicated to Our Lady and Thomas à Becket. The romantic Gothic has become an academic anomaly, the style once held to be learned and classical has become the source of inspiration. Human thought is cyclic, and its expression in art also; we stand at the close of a Gothic period, at the opening of a Renaissance revival, and we may fairly claim to possess, if not a living school of original art, at least a high average of execution and a strong historic sense. Unalloyed contempt for the work of its predecessors in such an age has not even the excuse of enthusiastic belief in its own perfect knowledge to condone it acts of vandalism; let us hope, therefore, that these will grow fewer as the historic theory of the day penetrates more widely, and that when next the whirligig of time brings in his revenges, and the Renaissance movement of to-day has become the popular commonplace yielding in its turn to a Classical or Byzantine revival, the leaders of that revival may not blame us, as we must so often blame the Gothic enthusiasts of the last century, for the wanton destruction of history in pursuit of a visionary and impossible consistency. Rather let us hope for a greater outpouring of the spirit that led the pious foundress of the new church to combine the wide outlook of the Renaissance with the reverence which honours the spirit of the past in invoking the names of the Virgin and the Saint

NOTES.

The Safety of St. Paul's Cathedral.

THE Ecclesiastical Commissioners have decided to give the St. Paul's Cathedral Preservation Fund a tenth part of the money which will have to be expended up to a limit of £7,000. The Clothworkers' Company have also voted a gift of £1,000, the Mercers' Company £500, and the Vintners' Company £105 towards the same object. The Treasurer of St. Paul's states that work has been already begun, but that the most critical question is that of dealing with the main supports of the dome, more especially with the piers on its south side, and that this would be a very costly matter, possibly including the removal of two or three monuments, and the Chapter would require a considerable sum to carry it out. He hopes that funds will be forthcoming, and that contributions will be sent in without delay. We think it is a great pity that such work should necessitate appeals for voluntary help, and that there are no funds which can be drawn upon for reparations to monuments of unique, national, and artistic value. But in this country we have even carried on our wars by means of voluntary appeals, as in the case of the late South African War, when Volunteers fulfilled their own obligations and those of others without thanks or return except that of a temporary emotional outburst on the part of those who remained behind.

Art Scholarships and Exhibitions.

THE London County Council are prepared to award during the current year sixty Scholarships for full-time day instruction and 110 Exhibitions for evening instruction. The Scholarships will be tenable for one, two, and three years, at approved institutions providing instruction in art or artistic crafts. The Exhibitions will be tenable at schools of art or technical institutions for two years, with a possible extension to three years. Maintenance grants are obtainable according to the circumstances of the candidate, and parents or guardians must reside within the County of London, except in the case of self-supporting candidates of full age, who must themselves reside within the county. As a general rule candidates must be under twenty-five years of age, and a certain number of the Exhibitions are reserved for those under eighteen. Exhibitions are only open to those engaged in, or intending to engage in, the artistic crafts. Candidates for the Scholarships will be required to submit works and also to undergo a three hours' examination test in Design. Not more than fifty of the Exhibitions will be awarded as the result of an examination in Outline, Model Drawing, and Geometry. Other Exhibitions will be awarded on the merits of works submitted, which must have been executed since Easter, 1913. Applications must be sent in not later than April 25, 1914, and the examinations take place about May 20. It is to be hoped that the younger members of the artistic building crafts will make every effort to avail themselves of the opportunity afforded by these Scholarships and Exhibitions.

Cancer Houses.

THE most dreaded of all diseases—cancer—because in a large measure its cause and origin is still a sealed book, will, until the mystery is solved by medical science, continue to be a subject of absorbing interest to the average man and woman. A clay soil, meat diet, alcohol, salt, and many other "causes" have been suggested in turn, only to be questioned and disproved by the result of medical investigation. Even the statistics, which go to prove that cancer is increasing, are doubted by medical men, who put the increased number of recorded cases down to more accurate statistical information. A contemporary refers to an address of Sir Thomas Oliver, Professor of Medicine at Dublin University, which was delivered recently at Newcastle-upon-Tyne, in which he reviewed the problem of "cancer houses" at considerable length. In a French village of 400 inhabitants eleven deaths were stated to have occurred in seven years, all being located in the same group of houses. Three years later there were seventeen cases in the same houses, all the patients belonging to different families. A list of 1,062 houses in Paris in which persons had died of malignant disease was recently drawn up, and already twelve fresh cases of cancer have been notified in them. Another remarkable series of cases occurred in a short street not one-twelfth of a mile long in a small town. In fifteen years, 1893-1908, nineteen people and a dog died in them of malignant disease, several of the houses accounting for more than one case each. In nearly all of these cases there was no hereditary predisposition to the disease, so the connection with the houses appears to be more than accidental. Further cases were quoted, all of them pointing to the same conclusion. Mice which have been introduced into an infected cage have contracted the disease, and it has been demonstrated that only after repeated cleansing and disinfection the taint has been removed. It may be that this proves nothing but the necessity for more thorough measures of disinfection and cleansing than are usually employed. It may be, on the other hand, proved that there are in certain localities and buildings predisposing causes which such measures cannot remove; in any case we should say it is incumbent on the health authorities to see that buildings in which cases of malignant diseases have occurred are absolutely closed to human habitation until they have been thoroughly disinfected before they are permitted to be again occupied.

A Great Sanitary Achievement.

THE well-deserved tribute paid by the medical profession, and by such representatives of our national life as the Archbishop of Canterbury and the Lord Chancellor, to Surgeon-General Gorgas, Chief Sanitary Officer of the Panama Canal Commission, is not only a recognition of the splendid achievements of an individual who, by stamping out malaria and yellow fever, rendered possible the construction of the Canal, but also a reminder of the value of the work undertaken in all civilised countries by medical officers of health and sanitary officials. The more fully we realise, both as individuals and as communities, that health is the greatest of all earthly blessings, and that to this end prevention is better than cure, the more highly will such preventive work be esteemed. While associating ourselves with that appreciation of the spirit animating the medical profession which prompted Lord Bryce to declare that it was the only one, so far as he knew, which laboured incessantly to destroy the reason for its own existence, we think it would be nearer the truth to say that preventive medicine is labouring incessantly to destroy the necessity for curative medicine. So long as organisms inimical to human life exist the doctor will continue to exist also, but his work in the future will be preventive rather than curative. Surgeon-General Gorgas has shown us what can be done in this direction by a capable man with authority and unlimited resources at his disposal, and his success seems to point a moral for those countries where both the authority and the resources of the sanitarians are unduly limited.

National Gallery Official Guides.

A STEP has been taken towards the better education of the public in matters of art by the appointment of official guides, or lecturers, both at the National Gallery and the Gallery of British Art, Millbank. We are glad to see, however, that no attempt will be made by the lecturers to put forward the views of any definite school of opinion or to establish an official school of criticism, but to aim instead at furnishing the key to the treasure house of art. We are inclined to agree with those who hold that a work of art needs no explanation, that so far as it needs explanation so far it stands condemned as a work of art, but, all the same, it is possible to apply this theory too logically, and where it is a case of a work of art executed in a former age, and expressing an outlook on life with which we are no longer familiar, it is doubtful whether it applies at all. There would seem to be ample scope for the official guides in helping the visitors to obtain that mental standpoint from which the various pictures are to be seen to the best advantage

THE SURVEYORS' INSTITUTION: THE REAL PROPERTY BILL.

We have received a very interesting Report from the Surveyors' Institution as regards Parts II. and III. of the Lord Chancellor's Real Property Bill, in which the clauses of the Bill relating to copyholds and other manorial incidents are carefully examined. Naturally the Report hinges to a great extent upon those special provisions of the Bill which are of interest to surveyors, but other general aspects are not lost sight of. As is correctly and clearly pointed out, the effect of the proposed legislation, if passed in its present form, will be to convert the steward of the manor for the time being into a local land registry of the copyholds within his jurisdiction. These will at once, on the Bill becoming law, become freeholds and will pass by the ordinary method of conveying freehold land. The mystic ceremonies of the Court Baron and Conveyance by the Rod will disappear for ever. On the other hand, rights as to timber, mines, and minerals, heriots, reliefs, rents, and stewards' fees for a period of five years will remain intact, and during that period any deed of conveyance of the copyhold land will become void unless produced to the steward for endorsement as regards the incidents of tenure to which it is subject. Within the period of five years, too, these incidents may be commuted without stamps and without fees to the Board of Agriculture, according to a fixed scale, the amount of which is set out in the Second Schedule to the Bill. Where, owing to the fact that the scale will, from special circumstances, work hardship on one party or the other, either party may appeal to the Board of Agriculture, whose decision will not only be final, but will involve payment by each party of their own costs, unless for special reasons the Board otherwise certifies. At present, as the scale under the present Act is not binding, valuations outside the Act are frequent, and apparently the contemplated change will to some extent work hardship to surveyors in restricting in this respect their area of employment. At the same time, having regard to the amount of copyhold land in the country and the many complicated questions which are likely to arise, certainly during the next five years qualified surveyors should find plenty to do in advising the parties whose rights have to be commuted, and as to the advisability of appeals. We are not altogether sure that we sympathise with the views comprised in the Report as to the preservation to the victorious party of his present right to costs. The certainty of having to pay one's own costs in practically every instance will have a great tendency to enforce reasonableness upon an impetuous litigant, and we venture to think that the Board of Agriculture may well be left to deal with those exceptional cases where the right to appeal is used as an engine of oppression. The suggestion that, having regard to his right of escheat, which is still preserved, the lord should be entitled to a copy of his Court Rolls when they are finally handed over to the Registrar under the Land Transfer Acts, is a useful one, and it is to be hoped that it may find a place in the Bill before it reaches its final form. There is also much justice in the suggestion that the steward's compensation should be paid by the tenant. Where the steward is left to settle with his lord his position is likely to be a difficult one. In the first place, he is often the lord's solicitor, and may have to contemplate the threatened withdrawal of a lucrative practice if he falls out too vigorously with the feudal superior. Again, many stewards are informally appointed and hold office only during the pleasure of the lord, and where there is a fund for division between the two, the steward is likely to come off badly if the lordly pleasure is paramount. Appointments for life are, we believe, in practice seldom now made. A difficult point will also arise where, as is sometimes the case, solicitors buy manors to become their own lords and stewards combined. It has always been a doubtful point to what extent the practice of taking fees under these circumstances is a legal one. The older text-books, for instance, regard the lord as a Vice-chancellor, sitting in his own court, and the sole arbiter of the tenants' wrongs in the case of an unjust steward, and give him a position wholly incompatible with the receipt of fees. Under the present provisions of the Bill, therefore, the steward's compensation is not likely to be a particularly generous or fair one.

The five years' time-limit for working out the compensation scheme is very justly criticised as insufficient. The number of difficult questions involved in copyhold law and the confusion of copyhold boundaries all over the country will render the task of the Board of Agriculture a most formidable one. Certainly an extension of the five years' period to seven would give all parties a better chance of working out the provisions of the Bill by mutual arrangement, and at the same time obtain for the Board of Agriculture a fairer opportunity of fulfilling the manifold obligations about to be imposed on it. As is also pointed out, there should be some arrangement as to appeal. It may work hardship to make the Board's decision final in every case. Many important questions of principle are likely to arise. Maybe the machinery of the Workmen's Compensation Act could be adapted to the Bill—that is to say, an appeal might be allowed on points of law only, and then made direct to the Appeal Court.

Renewable leases are to be abolished in favour of leasehold tenure of 2,000 years, and the fines on renewal are to be translated into an increased rent. With the criticism of the Report upon the compensation to the solicitor or agent concerned with such renewals as in the former case we have much sympathy. A client can shift his solicitor at a minute's notice, and, this being the case, the solicitor is unlikely to gather much in the way of compensation from a client if a dispute arises between them as regards division of the spoils. No doubt, however, many of these minor difficulties will be successfully adjusted on the further progress of the Bill. Meanwhile, to all those interested in the simplification of land transfer, it is of hopeful augury to note the watchful interest over its details manifested by the professional world; and to know at the same time that the Bill is in the hands of the first Lord Chancellor since Lord Cairns who can really claim to be an expert in real property law.

THE LONDON SOCIETY.

LORD PEEL (Chairman of the London County Council) presided at the United Service Institution on April 8 at a meeting of the London Society, when Sir Laurence Gomme gave an address on "The Government of London."

Sir Laurence Gomme said that local government in this country was essentially an English institution. It was Anglo-Saxon in origin and was represented by the ancient shires, hundreds, and villages. Originally they were in primitive form, and it was extremely interesting to know that at the present time they could trace out the ancient meeting-places of the shires in the open air. At those meetings every freeman was entitled to attend, and it was a democratic institution. The system passed away by the substitution of the justices of the peace and the counties, and it was not until the great Act of 1888 that popular government was restored. The hundreds had fallen almost entirely away from any local government services. They were originally a military unit, and at the present time they formed the taxation unit to pay damages caused by riot or civil disturbance. The village communities gave way to two institutions—ecclesiastically to the parishes and from the civil point of view to the manor. The villages had now really become the rural councils formed by the Act of 1894. Into this primitive system came a big intrusion—that of city government. City government was due to two causes, the first being the great commercial importance of the sites of the ancient Roman cities in Britain, which came to be utilised in the mediæval period, and the second being the military requirements of the tenth century, when Alfred the Great used the city organisation. But these ancient Roman cities were not governed by any system which could be called Roman. They were entirely English in their form of government. Although they had evidences of the Roman occupation in such cities as York, Lincoln, Exeter, and Colchester, yet they were all organised municipally on the English system. There was one great exception, and that was London, in which there was anything like a consistent element of continuity from Roman times to the present. Roman London was not only a city of peace, but it was a city in arms, and right through the pages of English history they found London exercising its right to assume arms under certain conditions; and the last instance was when the city equipped its volunteers to go to South Africa. Right from Tudor times to the mid-Victorian period London expanded in a way which made it a disgrace to modern civilisation that such a community could have gone on without any government at all. In 1855 Sir Benjamin Hall introduced the great Act for the government of London, and then stated that there were 300 different bodies engaged in the administration of London affairs, and that no less than 10,500 people were trying to govern London. A student of historical local government could conceive nothing more disastrous than this experimental legislation of 1855, for there was nothing like it in the whole of the country. Then came the passing of the Act of 1888, which formed the County of London under the London County Council. In 1899 the system of the borough councils was set up, but they were not corporations in the sense that provincial councils were. Since 1888 a great deal had happened, and almost every Act passed concerning London had had no relationship whatever with either the Acts of 1888 or 1899. The result was that they had now a jumble of authorities not unlike what they had in 1855, and at the present time it took 3,997 people to govern London, besides 586 justices. He was afraid he could put little else before them but the difficulties of London government. The difficulties created such a complex system or want of system that difficulties loomed in front of the excellencies, but one excellence was that men of distinction and great capacity gave their services on the governing bodies of London. With regard to the future, they had the blessed word "devolution" in the air, and one wondered whether the devolution promised in 1888 was at last going to begin. He was not one of those who considered that the future of London was mixed up with its present condition. He thought that the future empire would mean a world empire based upon very much the same sort of principles as the great Roman Empire was built on—an empire in which the peace of the world would be the policy of the world. If they ever got such a new world empire there was going to be a new London in this new world, and that was why he did not feel that the future of London would have such dependence on the present.

Mr. H. H. Statham, in moving a vote of thanks to the lecturer, said that in London they were almost bewildered by the number of authorities. An instance in point was the negotiations of the Royal Institute of British Architects with the borough councils on the question of street names and plates. Every one of the councils seemed to have different ideas on the matter. It was perhaps a small matter, but it indicated the spirit, and he considered it a mistake. But whatever new authority might govern London he hoped they would realise that one of its functions was to improve its architectural appearance. They might remember that years ago a great competition was instituted by the London County Council for the treatment of Kingsway and Aldwych. A great deal of interest was aroused, and then it went flat, apparently because they were told that tenants would not take sites unless they were allowed to put up their own buildings. He agreed that with a long street it was an arguable point whether the buildings should be treated all alike, but there could be no question that Aldwych ceased to be a crescent unless it was treated as a whole.

Mr. W. Woodward seconded the motion, and it was carried.

NORTHWOOD TOWN-PLANNING SCHEME.

At the meeting on April 9 of the Northwood Urban District Council, Middlesex, it was announced that their town-planning scheme had reached its final stage in the hands of the Local Government Board, to whom they will apply for sanction of a further scheme that will extend to parts of the districts of the Watford and Uxbridge Rural Councils, as well as all the land in Northwood and Ruislip uncovered by their pending scheme.

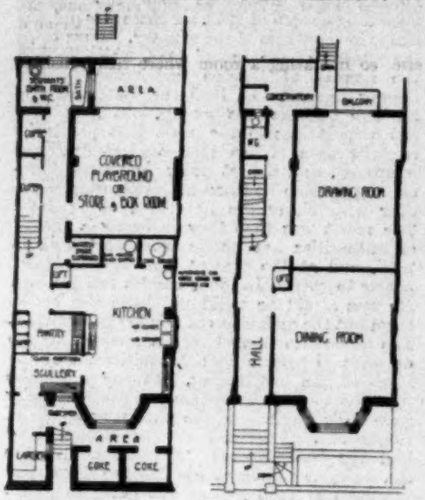
AN EIFFEL TOWER IN BELGIUM.

In presence of the International Wireless Telegraphy Commission, on April 8, the first rivet was driven in of a tower at Laeken, near Brussels, which will be carried up to a height of 333 metres (1,092 ft.), that is, 100 ft. higher than M. Eiffel's Tower in Paris, which weighs, though, only 8,000 tons. The tower at Laeken will be used for scientific purposes, more especially for investigations concerning meteorology and wireless telegraphy

DOMESTIC LIGHTING, HEATING, AND COOKING FROM THE WOMAN'S POINT OF VIEW.

AT Caxton House, Westminster, a paper was read before the Institute of Sanitary Engineers on April 1 by Mrs. Cloudesley Brereton, Officier

HOUSE IN HOLLAND PARK DISTRICT, W.



PLAN OF BASEMENT PLAN OF GROUND FLOOR

PLAN SHOWING BASEMENT REMODELLED

d'Académie, M.R.San.I., F.I.H., etc., on "Problems of Domestic Lighting, Heating, and Cooking from the Woman's Point of View," with special reference to the basement house, in the course of which she said:—

"Public opinion during the last ten or fifteen years has revolted against the basement house, but the revolt was in many cases not solely on account of the existence of the basement. Other factors entered in too numerous to mention; but among them were steep stairs, old-fashioned heating and sanitary arrangements, the fashion for migrating to Outer London and the corresponding suburbs of our great provincial towns, made possible by improvements in locomotion, the building of houses and villas of modern design in such semi-country districts, and the enterprise of large town stores in serving such communities with food, etc., almost as expeditiously as they are served in the centre of the town itself.

Other factors were the servant problem, with which was bound up the mistress problem and the household labour problem generally; while the universal spread of fundamental hygienic ideas helped the revolt against living and working for the whole or a large part of the day in subterranean rooms, offices, or passages, whether the house was in Marylebone or Mayfair.

The problem must be considered from the point of view of (1) the householder (especially the mistress of the house and her servants); (2) the sanitarian (including sanitary engineers, architects, builders, etc.); (3) the property owner (including his advisers and men of business, land agents, house agents, architects, etc.); (4) the legislator (whose interest is especially needed in the case of the houses which are rapidly becoming unwholesome tenement houses, and, as such, fit neither for the occupation in the future of respectable single families nor the one or two roomed tenants huddled together, who are the happy hunting ground of the "house farmer").

Modern sanitary science says that the basement house must be ended or mended; the basement as a "living" place abolished or remodelled. The remodelling of the basement house either for service purposes (as in the case of the more expensive town houses) or as cellars, furnace-rooms, etc. (as in the smaller houses), is a sanitary work worthy of the consideration of the progressive landlord as a strictly business and paying proposition, because there are pros and cons in the case of the suburban house as a home, just as there are pros and cons to be considered in the case of town residences, large or small.

The basement house may once more come to its own, because the modern sanitary engineer can, by dispensing with cumbrous solid fuel, by installing lifts and other labour-saving appliances, very well transform and give a new lease of life to property which might otherwise hopelessly depreciate beyond repair.

The general title of the paper, "The Problems of Domestic Lighting, Heating, and Cooking from the Woman's Point of View," is such a wide one that I have thought fit to narrow it down to the special consideration of one type of house which at this moment is to a very serious extent a glut on the estate market, namely, the basement house.

The logical reason of this limitation of the subject of the address is that the original invitation to speak to-night was given by the Institute as the outcome of a paper which was read at the Conference on Home Economics at the recent National Gas Exhibition. The subject then was, "Domestic Service as a Career for Educated Women." In the course of that paper it was said that, though home-making was work worthy of the very best brains, one of the insuperable obstacles to getting really well-educated women to undertake domestic work as a wage-earning career was the faulty architecture of many of our early Victorian town houses, with their steep stairs, stupid and meaningless corners and cornices, their lack of some of the very elements of sanitary schemes both upstairs and downstairs, because in these housework could not be properly done without wicked waste of precious human health and energy. But chief of all these structural drawbacks I placed the dark, dismal, and often inconvenient and unsanitary basements, where the best-intentioned person, who had ever before worked as an ordinary free woman in her own home, or that of anyone else with plentiful daylight, sunlight, fresh air, and an occasional glimpse of sky and of field or garden, could hardly be expected to be contented or to keep well in either body or mind.

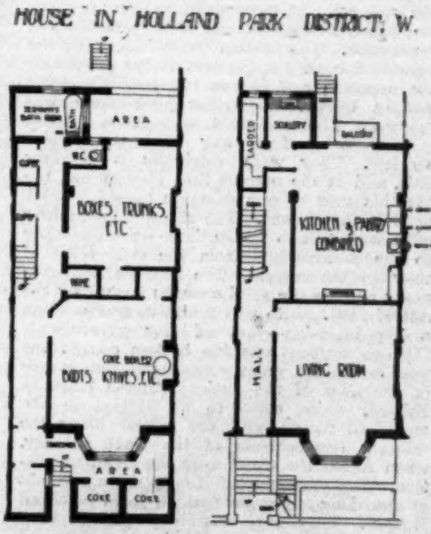
From the point of view of the mistress of the house, architecture is very largely to be considered in terms—

(*a*) Of health and happiness.

(*b*) Of domestic labour.

The latter may perhaps without exaggeration be regarded as the more important of the two, because the successful or unsuccessful working out of the labour problem in any household is the foundation of its health and happiness, or the reverse. This labour involves both the mistress and her maids, and embraces every type of house from the poorest to the richest.

HOUSE IN HOLLAND PARK DISTRICT, W.



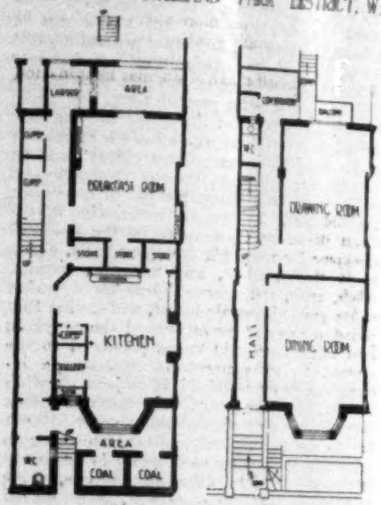
PLAN OF BASEMENT PLAN OF GROUND FLOOR

PLAN SHOWING BASEMENT ABOLISHED

It begins—shall we say?—with the servantless house wherein the mistress is her own maid-of-all-work, finding the brains and the nervous energy as well as the muscular and physical energy to organise and to carry out all the many processes which go to the running of a household, not least of which are those we now have under special consideration—the lighting (with which is bound up the ventilation), the heating (with which, again, ventilation is largely bound up), and the cooking, which some of my listeners to-night may consider the most important of all.

There are all the grades and types of house in between the cottage and the mansion, each with its separate problem, from the "maid-of-all-

HOUSE IN HOLLAND PARK DISTRICT, W.



PLAN OF BASEMENT AS EXISTING. PLAN OF GROUND FLOOR AS EXISTING.

work" type of house up to that with any number of servants you like to mention. I think you will agree with me that in all of them the fuel and light problem is a very serious factor, not only in providing health and comfort, but in making or saving labour, and therefore in governing the management of the family budget.

We are all faced with a servant problem, which is, of course, equally a mistress problem in more senses than one; but it is much more largely a landlord's problem than anyone has so far supposed. It is a mistress problem, for instance, which the thoughtful husband should never overlook in the case of the woman whose household allowance is such that she cannot possibly afford more than one servant to help her, even though she may be faced with catering for the needs of a young and growing family. For years she may be unable to keep, for more than a few months, any of the peripatetic generals who come and go under her roof, mainly on account of the unnecessary and soul-killing drudgery involved as the outcome of faulty architecture of the house in which she has to live, involving the carrying of heavy scuttles of coals to rooms high up in the house, the stoking of a big kitchen range, the carrying of heavy trays, pails, bath-water, etc., up steep and dark kitchen stairs practically all day and every day, so that the young girl who comes out at sixteen years of age to be taught to cook and clean and prepare herself for managing a home of her own, when she gets one, is turned into a combined stoker and carter and water-carrier. She is doing work, in fact, as physically hard and exacting as a railway stoker and Carter-Paterson man combined, in comparison with her age, sex, and physical strength. The unfortunate and overworked general wisely gives notice, and the servant problem may or may not then and there be ended so far as she is personally concerned.

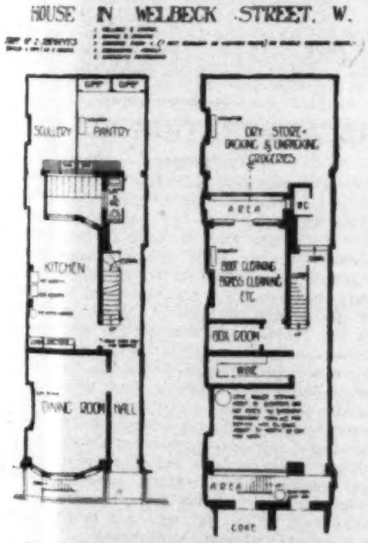
The supply of domestic help worth considering, by which I mean trained, intelligent domestic help, is undoubtedly at the moment exceedingly limited. A very large number of half-educated and wholly-untrained girls apply for posts as cooks, who, even ten years ago, would not have dared to apply for a good post of scullery-maid; for house-parlourmaids who do not know the elements of a general servant's work; for sewing-maids who cannot without supervision cut out and finish so much as a workmanlike pillow-case. And yet all of these ask salaries at least twice as great as the fully-trained person would have done in the time of our mothers or grandmothers. But provided they will do something towards lightening our own labours, and that they do not drink, steal,

or swear, we are glad enough to employ them at their own inflated valuation.

I wish I could get some of those landed princes like Mr. Mallaby-Deeley and Lord Howard de Walden to take up the question seriously as a business proposition, with help and consultative advice from some qualified woman as to particular plans for particular houses on the side of domestic engineering definitely affecting the woman's work in the home, and from the learned men in my audience on the more technical points of structure and details relating to our intricate by-laws and so on. Lord Howard de Walden has shown himself a man of singular imagination and a generous supporter of beauty, music, art, and drama as well as eugenics and public health in many directions. He and other rich property owners might do a great deal for the beautifying of London and the alleviating of the dreary drudgery of women in the home on a purely business and paying basis if the capital outlay were made wisely by starting on their own property as a public object-lesson. I, for my part, believe so strongly in the possibility of a sanitary future for the remodelled basement house that were I free to do so I would be willing to take up a share in the work on a business basis and to depend for my fee on a percentage of the increase in rental value on the sites experimented on, if proper steps were taken to advertise to likely tenants what was being done in the way of improvements in each district.

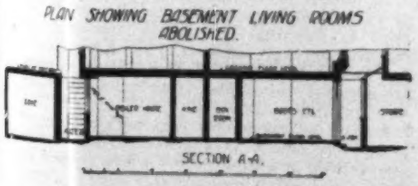
Where a house is being built to order for some special tenant the architect's way is of course clearer, and his work easier than in remodelling an old one; but even when a new house is being built he might be of more practical service to the mistress of the house than is always the case in the matter of labour problems, if he would place his knowledge and experience at her disposal, and attempt to enter into not only the building of her house, but the service problems which are likely to arise, and which he can, if only he will, reduce to a minimum of difficulty. If a better type of servant is to be looked for in the immediate future, old-fashioned methods of heating, cooking, and water heating will have to be superseded. The gas fire, the gas cooker, and

HOUSE IN WELBECK STREET, W.



GROUND FLOOR PLAN. BASEMENT PLAN.

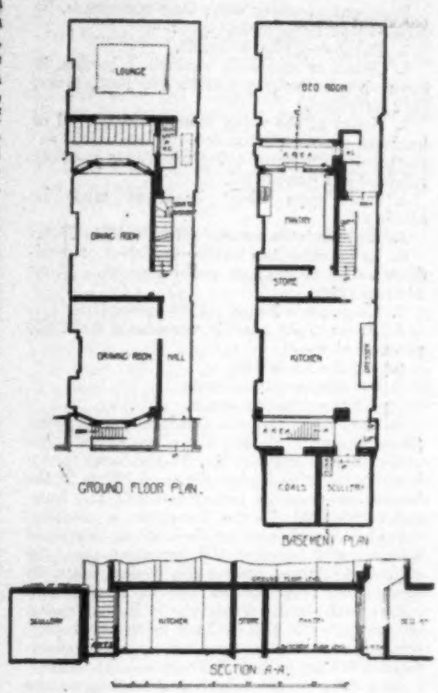
PLAN SHOWING BASEMENT LIVING ROOMS ABOLISHED.



the gas water-heater will, I am sure, play a very important part in the solution of the architectural difficulty. *Lifts* will save stairs, hot water will be available on every floor, and the distance between the rooms where the meals are cooked and where they are served will be reduced to a minimum, and awkward and dangerous steps and dark corners avoided. Sinks for washing up will be placed at convenient heights to avoid stooping, and taps for drawing hot and cold water into pails while they stand on the floor will be provided, both upstairs and down, and sinks for washing up will be placed in light places near or under windows.

We are, however, considering mainly the question of the houses already built; those in which almost every architectural fault that the mind of man or fiend could devise has been

HOUSE IN WELBECK STREET, W.



committed. And these make up in our towns perhaps 50 per cent. of the houses lived in by ordinary mortals with a medium-sized purse. The stairs are frequently narrow, dark, and steep; the passages long, winding, and full of corners introduced in the most ingenious way; the linen cupboards, larders, and all the essential places for storage that a country woman prides herself upon, and superintends so thoroughly herself, are dark, unventilated, and frequently as far away from the place they serve as ingenuity or stupidity can put them. The larder, perhaps, is at the far end of the basement from the kitchen, because an endeavour was made by the architect to put the kitchen in the front of the house so that it might have a suspicion of daylight if only through a chink of glass in the pavement above. Then, having planked the kitchen down there, it was found that the larder must go at the back in the most inconvenient place in relation to the kitchen, and frequently next to the servants' lavatory, because the coal cellar was bound to come at the front of the house in order that a hole might be made in the pavement through which to shoot the necessary coal.

We have heard from Dr. Meredith Young and other research chemists and physiologists the expert opinion of medical men and women on these points, namely, that the kitchen quarters, where your food is prepared, cooked, and stored, where your salads are washed and your fowls are trussed, are more important to the health of the house than the furnishing and decoration of the dining-room or drawing-room, or even the ventilation and the warming of the bedrooms.

Yet how few of us women, even in spite of our efforts at cleanliness, would choose with pride to take a foreign visitor first and foremost to look at our kitchens, larders, pantries, storerooms, and linen cupboards!

As I have said on a former occasion, if women would rise in a body and protest against the basement house I am quite sure that architects would find some way, in these days of modern engineering, of dispensing with them, even in houses too precious to be pulled down, or of at least mitigating their undoubted unsanitary influence upon the whole lives of the occupants who live about them, not to mention the servants who live and work in them.

In very large houses, where they constitute practically the whole working department, much can be done by concrete flooring, white paint, and varnish, natural daylight grasped from artificial sources, ventilating gas lamps or systems of exhaust fans, working either independently or in connection with the ordinary heating arrangements, to keep them sweet and pure so far as may be. Lifts to mitigate the stair difficulty, and the provision somewhere higher up for a sitting-room for the servants when they are off duty, but not going out, can very often be arranged by turning the basement servants' hall into a box-room or something else, so liberating a room where real sunshine and daylight can penetrate.

The basement problem in houses much smaller (say from £50 a year to £200 a year rental) is a much more serious one, because in these houses one or two things generally happen.

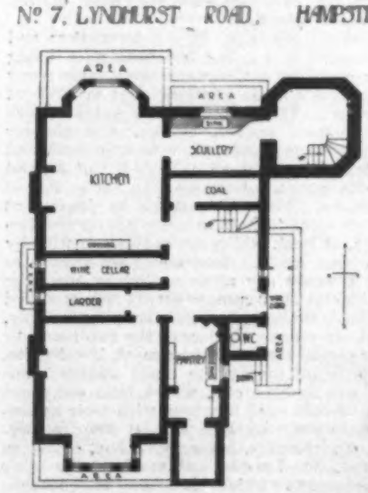
In the one case the mistress and mother of the household is driven to spend a very great proportion of her own time in the nether regions, with the servant if she has one, and alone if she has not, and the husband cannot be surprised if it is generally a very worried and anæmic person who meets him night by night on his return from works or office.

The woman who does not do this runs another danger. The trying stairs and the distances from her own living-rooms and nurseries to the kitchen quarters tempt her perhaps to keep far more away from her kitchen, scullery, pantry, and so on, than is good either for health or for pocket.

It seems to me to be worth while, at any rate, when a large number of basement houses in one district fall empty and the landlord has to make a bit of a gamble as between turning them into unsatisfactory tenements or keeping the old-fashioned class of tenants, to consider whether he would not be able, even if he abolished the basement rooms as kitchens and offices, to get the same house-rent for the diminished number of rooms available, or even more if he took certain drastic measures with regard to the basement portion.

From the property owner's point of view it hardly needs to be pointed out that there are in London large areas of basement houses, otherwise well and soundly built (sometimes whole streets of them), where the house agent's notice board is the most prominent feature of the landscape. A coat of paint or its equivalent in stone-mason's work, etc., on the outside of these is not enough to deceive the intelligent housewife of to-day when she is house-hunting, for she knows that they are nothing but whitened sepulchres—burial places for every housekeeping hope and frequently for every matrimonial hope. In such areas the property owner ought to be prepared for any reasonable

No. 7, LYNDHURST ROAD, HAMPSTEAD.



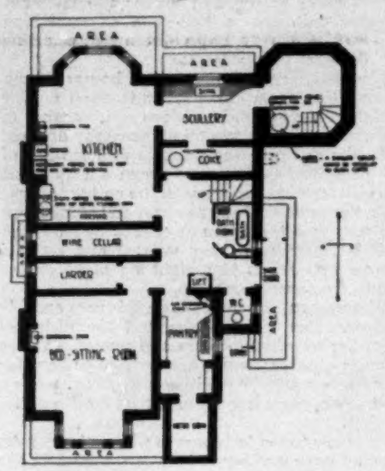
PLAN OF BASEMENT BEFORE ALTERATIONS

scheme that might bring such houses into favour once more. I believe that if a certain amount of outside decoration (however perfunctory) were done to freshen them up and prevent woodwork and stonework from utterly perishing, and if one or two in the terrace were remodelled so that a house agent might show house hunters what the landlord would be prepared to do and the terms on which he would

be prepared to do it, not only would they let, but let at such a rental that the percentage added to the original rent would give him a reasonable interest on his capital outlay.

In districts somewhat less hopeful the financial argument is, however, just as sound, for where houses when let fetch, say, £100 a year, and the landlord has on an average not more than 75 per cent. regularly let to good

Nº 7, LYNDHURST ROAD. HAMPSTEAD.



PLAN OF BASEMENT AS EXISTING.

tenants, it would pay him to make the improvements and yet let them for no greater rent, because he would get back the return on his outlay from the other 25 per cent. if they were all full. He would, in fact, in many cases, get back more than the 25 per cent. in the "good-will" (or whatever it is called in estate management) which would result in keeping the neighbourhood popular and up to date and not among the "has-beens."

I am going to assume at the outset that the only way to do without the "lower regions" is to abolish smoky fuel altogether, and in many cases to abolish all solid fuel, including even coke, which, however, may be retained under certain conditions which will be outlined presently in some remodelled houses. Gas should be used for lighting, heating, cooking, and water heating. Some architects and housing engineers might, of course, prefer to put in other forms of lighting for decorative purposes in conjunction with gas lighting for ventilating purposes and the bulk of the economical lighting.

Speaking generally, in the servantless and one-servant house, the basement as a living place could be entirely abolished, with many advantages and no disadvantages to landlord or tenant. The mistress would get her work done better, quicker, cleaner, and cheaper without the domestic offices underground, and the landlord would get as high a rent as, and in some cases a better rent than, under the old conditions. You will perhaps be puzzled at the outset as to how to make up for the two rooms, at least, which are done away with by abolishing the old basement. In answer to this, I would say at once that in the large town house the basement should be remodelled and made sanitary, and that, speaking broadly, in all other cases the loss of the two rooms or their partial loss would be almost, if not quite, compensated for by the much smaller space that gas cookers, etc., would take compared with the old solid fuel type with their accompaniments of coal, such as coal cellar, cinder-box, cinder-sifters, housemaid's box, blacklead brushes, flue brushes, and much of the other paraphernalia which fills up the kitchen quarters.

It is assumed, of course, that dispensing with the basement would only be possible if coal and coke carrying were entirely dispensed with.

In all cases other than the largest-size houses the room behind the dining-room, whether morning-room or drawing-room, should be transformed into the kitchen, with gas cooker and water heater and all other necessary appliances.

To return to the problem of sacrificing the two basement rooms. Those people who have made use of one of the downstairs rooms as a breakfast-room probably did so only in order that they might for certain meals go down to be near the kitchen and save the carrying of things upstairs to the dining-room. The moving of the kitchen to the same floor as the dining-room would remove also the argument for having a breakfast-room as well as a dining-room, and would lighten the household labour tremendously. In many cases, with a simpler form of home-life, which I hope is coming, a dining-room, to serve also as the family living-room, would be sufficient, instead of a separate drawing-room and dining-room, with in some cases a breakfast-room also.

Basement property may, for convenience, be divided into seven main types:—

1. The lowest type in slums.
2. Clerks' or mechanic workmen's houses, in town or suburbs (say £30 to £60 rent, taxes, etc., inclusive).
3. House of the rising young professional or business man. (Rent £60 to about £150.) Basement capable of being wholly or partially retained but remodelled.
4. Same type where basement must be abolished.
5. Medium town house. (Rent £150 to £250.)
6. Large suburban house—detached or semi-detached; basement or semi-basement. (Rent £100 to £250.)
7. Large town house. £250 upwards.

All these types must be considered from the point of view—

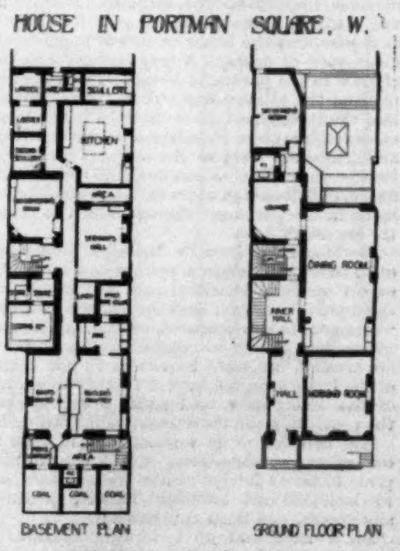
(*a*) Of the housewife,
(*b*) Of the sanitarian, and
(*c*) Of the property owner.

In the case of the first and last type of house (Nos. 1 and 7 above), they are outside the scope of this paper. No. 7—the large town-house type, with its big group of offices in the basement—must be remodelled and the basement retained. It would not be a practical thing to suggest, however dark the underground rooms might be, that the basement could be abolished. There may come a day when in some cases these offices will be turned into cellars and the kitchens rebuilt in the region of the roof; but that will not be in our day on any large scale. Moreover, this is only possible when a lift can be installed from cellar to attic."

Mrs. Brereton then illustrated her suggestions for transforming basement houses of the second to sixth types with some plans prepared by Messrs. Monson, some of which we give, and said:—

"Where basements are abolished the main principle has been to bring the kitchen up level with the dining-room and to substitute throughout the house gas fires for coal fires, and gas water-heaters of one of the four usual types (storage boilers, circulating boilers, geysers, or califonts). In certain cases—the majority of cases—I have suggested the installation of a coke boiler either in the disused cellars or in the kitchen, to heat the domestic

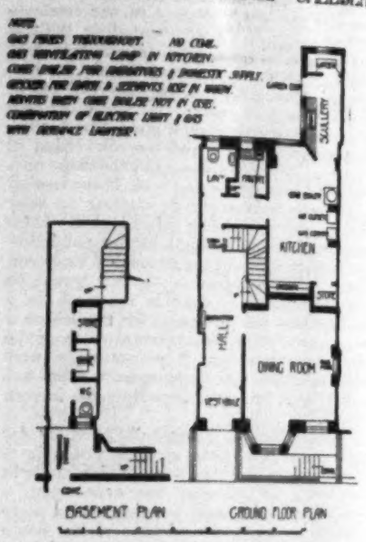
HOUSE IN PORTMAN SQUARE, W.



BASEMENT PLAN GROUND FLOOR PLAN

water system of the house as well as to heat the kitchen or keep the cellars dry and wholesome. These coke boilers may be divided as to their functions under two heads:—(*a*) In the smaller house, for economy's sake, they have been indicated on the plans as built in the kitchen to warm it, warm the domestic water supply (baths, etc.), and also supply waste heat to at least one radiator to take the chill off hall and landings, making it thereby possible to be extremely economical with the gas fires throughout the house; (*b*) In large houses gas water-heaters have, as a rule, been suggested for the domestic hot-water supply, with coke boilers (or, in exceptional cases, gas furnaces) for the radiators only. These radiators (which are, of course, in accordance with the most

HOUSE IN VALE AVENUE CHELSEA.



modern scientific ideas, "low-temperature" radiators, governable by means of thermometers) have been placed under the windows in large rooms, in halls, staircases, and servants' quarters, so that the house in question may be kept always dry and moderately warm, and the gas fires used only as intermittent heat to provide radiant heat when the respective rooms were actually in use (for example, in the dining-room before and during meals, in the drawing-room for a few hours daily or weekly, in the library and billiard-room when in use, in the bedrooms to dress and undress by, or continuously in cases of sickness, as may be from time to time required by domestic circumstances and by our varying atmospheric temperature)."

THE ARBITRATION CLAUSE.*

Preliminary.

BEFORE presenting this paper to the Society I desire to make one or two preliminary observations with regard to the purpose I have in view. I do not wish to talk at large about arbitration, or to treat of its advantages or disadvantages. Suffice it to say that it has become and remains a necessary and important part of our legal procedure. Again, in dealing with the subject before me, I do not propose to treat the members as if they were listening to a new topic, discussed for the first time. I may assume that most of those who hear or read this paper know something of arbitration. Many will have acted as arbitrators, most will have been concerned with arbitration proceedings, while a large number are probably more familiar with certain aspects of the matter than I am. But I shall endeavour to refrain from hiding my meaning in the midst of a cloud of legal terms and phrases.

In dealing with arbitration from the point of view which is interesting to the architect I hope to illustrate my points, not only by reference to cases reported in the *Law Reports*, but to certain other decisions. Some of these are not easily accessible. One has never before been published.

I shall not necessarily deal with arbitration in its every aspect. I only want to discuss with you certain practical points which appear to me to have given both lawyers and architects a good deal of difficulty during the past few years.

Clause in the R.I.B.A. Form.

I propose to consider the subject before me in relation to building contracts, and as most of those documents are in a common form it will be convenient to consider the arbitration

* A paper by Mr. W. Valentine Ball, M.A., Barrister-at-Law, read at the meeting of the Society of Architects on the 16th inst.

clause which is to be found in that form, namely, Clause 32 of the form approved by the Royal Institute of British Architects. I have no doubt that it was carefully drafted, with the assistance probably of eminent counsel. Nevertheless, it is not altogether easy to understand, and various interesting questions arise with regard to it. Here is the exact text of the clause :—

> 32.—Provided always that in case any dispute or difference shall arise between the employer or the architect on his behalf and the contractor, either during the progress of the works or after the determination, abandonment, or breach of the contract,
> as to the construction of the contract, or as to any matter or thing arising thereunder (except as to the matters left to the sole discretion of the architect under Clauses 4, 9, 16, and 19, and the exercise by him under Clause 18 of the right to have any work opened up) or, as to the withholding by the architect of any certificate to which the contractor may claim to be entitled,
> then either party shall forthwith give to the other notice of such dispute or difference, and such dispute or difference shall be and is hereby referred to the arbitration and the final decision of A. B., or, in the event of his death or unwillingness or inability to act, of C. D., or, in the event of his death or unwillingness or inability to act, of a person to be appointed on the request of either party by the President for the time being of the Royal Institute of British Architects, and the award of such arbitrator shall be final and binding on the parties.
> Such reference, except on the question of certificate, shall not be opened until after the completion or alleged completion of the works, unless with the written consent of the employer or architect and the contractor.
> The arbitrator shall have power to open up, review, and revise any certificate, opinion, decision, requisition, or notice, save in regard to the said matters expressly excepted above, and to determine all matters in dispute which shall be submitted to him, and of which notice shall have been given as aforesaid, in the same manner as if no such certificate, opinion, decision, requisition, or notice had been given.
> Upon every and any such reference the costs of and incidental to the reference and award respectively shall be in the discretion of the arbitrator, who may determine the amount thereof, or direct the same to be taxed as between solicitor and client, or as between party and party, and shall direct by whom and to whom and in what manner the same shall be borne and paid.
> This submission shall be deemed to be a submission to arbitration within the meaning of the Arbitration Act, 1889.

Its general effect is as follows :—It is that disputes which arise between builder and building owner are to be referred, not to a court of justice, but to an arbitrator named in the contract. In other words, the parties agree to be bound in certain matters by the decision of a self-appointed tribunal. That arbitrator is to have full power to settle all matters in dispute subject to this, that certain questions which arise in the course of the works are left to the decision of the architect.

Matters upon which the Opinion of the Architect is Final.

Let me draw attention without delay to the questions which are for the architect to decide. In general, they are matters upon which an immediate decision is essential; immediate in the sense that unless they are decided in one way or another the works cannot proceed.

The following is a list of matters with regard to which the word of the architect is final. These are :—

(*a*) A decision of the architect with regard to discrepancies in the drawings, or between the drawings and the specification (Clause 4);
(*b*) The dismissal of any workman at the request of the architect (Clause 9);
(*c*) The removal of improper materials and the removal and re-execution of work not in accordance with the drawings, specification, or instructions, provided the decision is given during the course of the works (Clause 16);
(*d*) The assignment and sub-letting of any portion of the works (Clause 19);
(*e*) A decision of the architect that part of the work shall be opened up for inspection (Clause 18).

Matters which may have to be Determined by the Arbitrators.

The following are examples of questions which may have to be determined by an arbitrator :—

(*a*) Whether a particular piece of work is wholly outside the contract, and, if so, what is to be paid for it (see Clause 1);
(*b*) Whether a particular piece of work is to be reasonably implied from the drawings, etc. (see Clause 4);
(*c*) A decision that errors in setting out shall be amended at the cost of the employer (see Clause 6);
(*d*) Whether a defect arising within a stated period from completion was due to materials or workmanship not in accordance with drawings, specifications, or instructions (see Clause 17);
(*e*) Whether work opened up was or was not executed in accordance with drawings, specifications, or instructions (see Clause 18);
(*f*) Whether an objection made by the contractor to a specialist was or was not reasonable (see Clause 20);
(*g*) Whether the works were injured by frost or other inclemency of the weather (see Clause 21);
(*h*) Whether the works could reasonably have been completed by a certain date (see Clause 24);
(*i*) Whether or not the contractor was entitled to an extension of time (as provided by Clause 25);
(*j*) Whether a notice given by the architect to proceed with the works in accordance with Clause 26 was reasonably or properly given (see Clause 26);
(*k*) The arbitrator may be asked to review a decision of the architect as to the value of works executed which justify the grant of a certificate, and the refusal of the architect to grant a certificate (see Clause 30).

Whether Arbitrator can Decide a Point arising after Completion.

There is one point upon this clause which has not, so far as I know, been judicially considered, yet it goes to its very root. Look at the first few words of the clause. You will observe that the arbitrator only has jurisdiction "in case any dispute or difference shall arise between the employer or the architect on his behalf and the contractor, either during the progress of the works or after the determination, abandonment, or breach of the contract." It is clear from this that if a dispute arises while the works are in progress, *e.g.*, before the roof is on, the arbitrator has jurisdiction. It is also clear that his aid can be invoked in a case where the builder throws up the job or the employer commits a breach of the contract by not allowing the builder to complete. The doubt remains—has the arbitrator jurisdiction after the job is finished in the ordinary way? You will notice that he has jurisdiction with respect to a dispute arising after the determination of the contract. Were this the only clause in the whole contract in which the word "determination" is used, I should take the view that it is equivalent to the word "end" or "completion." But if it means, or is intended to mean, "completion," nothing would have been easier than for the draughtsman to use the word "completion." That word "completion" is in fact used in the contract. See, for instance, Clause 17, which deals with defects, etc., appearing "within . . . months from the completion of the works." The fact is, however, that the word "determination," as used in this contract, is a term of art—that is to say, it is a word with a special meaning. Look, for instance, at Clause 31. That clause provides for what is to happen if the employer does not honour a certificate or if the employer becomes bankrupt and the trustee in bankruptcy does not satisfy the contractor that he can carry out the contract. In these cases the contractor may determine the contract by notice in writing to the architect and recover from the employer payment for all work executed and for any loss he may sustain upon any plant or material supplied or purchased or prepared for the purposes of the contract. "Determination" of the contract is therefore a different thing from "completion," and I venture to express the opinion that after final completion of works the assistance of the arbitrator appointed under the contract can no longer be invoked. For instance, suppose a defect appears after completion—such, for instance, as subsidence of a wall or the dry rot of joists on the ground floor—the employer may complain that these defects were due to the fault of the builder, but if he wants to obtain redress he must do so by action at law. In this connection it should be borne in mind that the final certificate of the architect is not conclusive as to the sufficiency of any work or materials to which it relates so as necessariiy to relieve the contractor from liability.

It will be noticed that the reference is not to be opened until after the completion or alleged completion of the works, unless with the written consent of the parties. It is necessary to bear in mind the distinction between a reference itself and the cause of the reference or the subject-matter of the dispute. The actual hearing of the arbitration is not to take place until after completion, but (as I have already indicated) the cause of the dispute must have arisen before that time.

It will be noticed that the arbitrator has power to review practically any decision or certificate of the architect. Thus it comes about that an architect may at some time or other be called upon to support his own certificate in the witness-box. In these circumstances the propriety of his seeing that his certificate can be fully supported on the ground of fairness will be obvious.

Damages for Delay when Time has been Extended.

There is a very important question arising on the Institute form to which I would like to refer. The architect has power to extend the time for completion in certain cases. Thus, if delay is caused by a strike or bad weather, or extras, or in consequence of the contractor not having received in due time necessary instructions from the architect, the architect must make a fair and reasonable extension of time for completion in respect thereof. Mere extension of time, however, will not always be sufficient for the contractor. Delay may have the effect to throw the work over into the winter months, or it may otherwise increase cost by rendering it necessary for building operations to be carried out at a time when labour is scarce and expensive. May the employer, in such circumstances, claim damages and seek to have the amount determined by arbitration?

This very question arose in a recent case, which is not reported, but which came under my notice. The name of the case is Trollope & Sons and Colls & Sons, Ltd., *v.* W. M. G. Singer, and it was heard by Mr. Justice Channell, on December 1, 1913. The material facts were that owing to delay in giving orders for works the clerk of the works was kept idle, and the builder sustained other damage. He sought to recover this in arbitration proceedings, when the employer took the point that there was no claim.

Mr. Justice Channell said (according to a copy of the shorthand note of his judgment) :—

> I have only to deal with certain matters which are set out in the award for the opinion of the Court. If he has included matters outside his jurisdiction it is for the Divisional Court and not for me to take them into account. In substance an award in the form of a special case is equivalent to a request by the arbitrator to inform his mind upon certain points. I have to deal with the contentions put forward in paragraphs 18, 19, 20, and 21.
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> Paragraph 18 is as follows [his Lordship read this paragraph and continued] :—
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> It is contended that the power to extend the time which is given in certain events by Clause 25 has effect to preclude a claim for damages if there is an extension of time. In other words, it is urged that an extension of time is to be deemed to satisfy all damage. Now, I cannot think that is what it means. The Clause specifies a number of events on the happening of which the architect is empowered to extend; indeed, he is not only empowered, but the clause says he shall, in those events, make a fair and reasonable extension of time for completion in respect thereof. I have to consider what they are. They fall into three categories. The first two are *force majeure* and exceptionally inclement weather. In respect of these the contractors might (unless they were specially provided for in the contract) say: "It really is not my fault that I have not completed; the weather was bad." He could make a grievance, but if he has contracted to do the work within a particular time the risk would be his according to our law. Although in that case he might ask for an extension, he would not be entitled to it. Unless the contract contains some such Clause as 25, which provides for *force majeure*, the contractor would have to take the risk. The Clause then goes on to a different class of thing, "by reason of authorised extras or additions." Authorised extras and additions are, of course, extras authorised and contemplated by the contract. They do not amount to a breach of contract. It is no breach of contract by an employer to order something extra, and as a rule the contract shows that it is contemplated that there shall be extras, and the contract even provides a way of dealing with them and a way of ascertaining them. Nevertheless, an extra is a thing which, if done, and if so done as to make it impracticable to complete the work in the contract time, prevents the contractor being bound to complete within that time, and it is a matter which it is obviously reasonable to provide for by an extension of time.
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> In Jones *v.* St. John's College, L.R. 6 Q.B., 115, the strict rights of the employer were preserved to him in respect of non-completion in the extended time. Then there is a third event or series of events in which this Clause comes into operation. That is a breach or breaches of contract by the employer. I do not distinguish between a breach by him and by his agent. If such breaches are committed, and if they have the consequence of preventing the contractor completing the contract work in the contract time they do not exactly give him an extension, but they free him from the consequences of non-

completion. They free him from penalties; and in that case there is a condition of things which it is desirable to provide for by giving the architect power to extend the time. It follows that there are three classes of cases in which it is desirable to give the architect power to extend the time. Why is that a reason to deprive the contractor of his remedy in damages? I can see no reason whatever for doing it. There is ample reason for the Clause, but there are no words in it which deprive the contractor of his right to damages. When time is extended that affects the contractor not merely in the time he has to take in order to complete, but it also affects him pecuniarily in the way of damages. Why the employer should not pay damages I cannot see. This is a simple case where, by reason of the delay in giving orders to go on with the work at some particular place, certain work was left idle on the place, and the clerk of the works or somebody on the spot who had to be paid was idle. An extension of time will prevent the contractor being liable for delay, but it will not put back into his pocket the damage which he has sustained by reason of having the men there and paying them. It seems to me he has a right to have those damages, and I must, therefore, decide against the employer.

I have given that extract from his judgment at length, because it is not recorded elsewhere and may be of value to those members of the Society who ever have to construe Clause 25. The case of Bush *v.* Whitehaven Trustees (1888), 2 H.B.C., 118, may also be referred to in this connection.

Grounds for Objecting to an Arbitrator.

It does not follow that because a man is named as arbitrator in a contract he will necessarily be allowed to act, or that the parties will necessarily be compelled to submit their disputes to him. Circumstances may arise which render it inequitable that he should act. He may have become biassed by his position, as where, for instance (to take an extreme case), he were to enter into partnership with one of the parties to the contract. I do not propose to consider all the various grounds upon which an arbitrator may be objected to, but there is one aspect of the matter which it is important to deal with.

A question has arisen in many recent cases whether a person employed and paid by one party to a contract can properly act as arbitrator in the settlement of disputes. This point is hardly germane to a discussion of Clause 32 of the R.I.B.A. form, because it is there impliedly, if not expressly, declared that the arbitrator shall be an independent person. Thus (as we have already seen when perusing the clause), disputes are referred "to the arbitration and the final decision of A. B., or, in the event of his death or unwillingness or inability to act, of C. D., or in the event of his death or unwillingless or inability to act, of a person to be appointed on the request of either party by the President for the time being of the Royal Institute of British Architects, and the award of such arbitrator shall be final and binding on the parties." It is manifest that the architect—that is to say, the architect acting under the contract—could hardly be the arbitrator within the meaning of this clause. If he were he might be placed in the absurd and anomalous position of having to review his own decisions.

But many of you may have clients who are groaning under an arbitration clause. Thus, in contracts with local authorities it not infrequently happens that disputes are all referred to the County or Borough Surveyor, and the builder or contractor may very well take exception to his acting when the time comes. I need hardly point out that he cannot be objected to merely because he is in the employment of and is paid by one party.

It has long been settled law that this does not disqualify him. But the cases go further. They show that even where a man may possibly be biassed or has expressly declared himself on a matter he is not necessarily disqualified. In Jackson *v.* Barry Railway Company (1893, 1 Ch. 238) objection was taken to an engineer of a railway company acting in the capacity of arbitrator because in a preliminary correspondence he had expressed a view adverse to the interests of the contractor. This fact did not induce the Court of Appeal to say that he was unfit to act. Lord Justice Bowen said:—"To an adjudication in such a peculiar reference the engineer cannot be expected, nor was it intended, that he should come with a mind free from the human weakness of a preconceived opinion. The perfectly open judgment, the absence of all previously-formed or pronounced views—which in an ordinary arbitrator are natural and to be looked for—neither party to the contract proposed to exact from the arbitrator of their choice. They knew well that he possibly or probably must be committed to the prior view of his own, and that he might not be impartial in the ordinary sense of the word. What they relied on was his professional honour, his practice, his intelligence, and the contractor certainly had a right to demand that whatever views the engineer might have formed he would be ready to listen to argument, and at the last moment to determine as fairly as he could after all had been said and heard."

The doctrine above enunciated has been considerably modified by certain recent decisions. Thus, it has been held by various judges that a reference to the surveyor or architect of one party will not be enforced (*a*) if the question to be decided is one which cannot be properly determined without the cross-examination of the surveyor (Freeman *v.* Chester Rural District Council, 1911, 1 K.B., 783); (*b*) if the dispute be as to the existence and terms of an agreement made between the surveyor (acting for the building owner) and the contractor (Aird *v.* Bristol Corporation, 1912, 28 T.L.R., 278); (*c*) if the question is whether the surveyor did or did not act unreasonably, *e.g.*, by making alterations and amendments in drawings, by delaying the delivery of drawings and materials, and by rejecting suitable material (Blackwell *v.* Derby Corporation, 1909, 75 J.P., 129); (*d*) if, although acting honestly, the surveyor has lost his independence by conferring with and accepting advice from one party to the contract (Roberts *v.* Hickman, 2 H.B.C. 3rd Supplement, p. 10); (*e*) the contractor will not be compelled to submit if the matter in issue is an unseemly personal dispute raising a vindictive feeling between the engineer and the contractor, and the engineer has so strongly expressed his view that it amounts to a prejudgment (Nuttall *v.* Manchester Corporation, 1893, 8 T.L.R. 513).

I think it may be said that in the above cases the Courts have gone as far as they are likely to go in the direction of relieving contractors from the arbitration clause. I heard of the following attempt to extend the doctrine. A dispute was on foot between a contractor for the erection of a county hospital and the local authority. The contractor had made a large claim for extras, and the architect had quoted the County Surveyor, who was named as arbitrator in the contract, as having said that in allowing for extras he had already taken the contractor's claim into account. In these circumstances the contractor sought to have the reference to the surveyor set aside on the ground that the surveyor had already committed himself to a view of the matter. He failed in his attempt.

It may seem odd that a reference should in any case be ordered to proceed when one party takes serious objection to the arbitrator, but when considering this class of case it is well to remember that the parties have voluntarily bound themselves to submit disputes to a certain person. In the stress of competition your builder or contractor makes a tender and rushes blindly in without considering the arbitration or any other clause. He has only himself to blame if, when disputes arise, the judge who is to consider them is not altogether to his liking.

Conduct of the Arbitrator.

Having said thus much about the arbitration clause, I should like to devote the rest of my time to the conduct of an arbitrator. Perhaps a few hints on this matter from the point of view of a lawyer may be found useful. The function of an arbitrator is similar to that of every judge. He is there to "hear and determine." *Audi alteram partem* is an injunction which he should keep constantly in mind. One side is all very well until you hear the other. The evidence which a witness gives in chief may be fairly convincing until you hear what he says in cross-examination. The case for the plaintiff may sound unanswerable as presented by counsel in his opening speech; but it is essential for the arbitrator to keep an open mind. Let me remind you of what one of the greatest Chancellors of all time said concerning the duty of a judge. "Judges," wrote Lord Bacon, in his essay, entitled "Of Judicature," "ought to be more learned than witty, more reverend than plausible, and more advised than confident." And again, "Patience and gravity of hearing is an essential part of justice, and an overspeaking judge is no well-tuned cymbal. . . . The parts of a judge in hearing are four—to direct the evidence; to moderate length, repetition, or impertinency of speech; to recapitulate, select, and collate the material points of that which hath been said; and to give the rule of sentence."

It would be almost impossible to state the whole duty of a judge in smaller compass.

There is much to be learned from watching the cross-examination of the witnesses. Close attention to the demeanour and unconscious actions of the man in the box may help to elicit the truth. Anyone who ever attended the County Court at Whitechapel or Bloomsbury in the lifetime of Judge Bacon must have been struck by the fact that while a witness was in the box the learned judge never took his eyes off him. Even when, in the days of the insanitary oath, the plaintiff or defendant was in the act of kissing the book, the watchful eye was always open. "The witness has not been sworn," the judge would say, "he only kissed his thumb!" It was by dint of this minute observation that justice could be done in a Court where perjury was often regarded by litigants as quite a minor offence.

The power of being able to keep an open mind until all that can be said has been said is also an integral part of the judicial faculty. A celebrated judge (who is still living) was once chaffed for having changed his mind during the course of an argument. His only comment was:—"I rejoice to think that I am not so old as to be incapable of being convinced by argument."

The relative importance of the evidence given by various witnesses must of course be decided on the spot. It is well, however, to beware of the witness who is too glib and of the expert witness who is obviously trying to fight the case of those on whose behalf he is appearing.

The architect sitting as arbitrator must of necessity use his own judgment in deciding technical matters. He has scarcely any need to rely on the evidence of experts, although it is very desirable that he should give due weight to their opinions. He must not, however, refuse to hear evidence and argument. I know of a case in which an engineer had been asked to settle a dispute about a motor-car. After counsel for the plaintiff he asked to see the vehicle in question, which was brought to a convenient place outside the Court. Having seen the car, the arbitrator said:—"I have made up my mind about this matter, and do not want to hear further evidence or argument." An award made in such circumstances could be set aside as not having been made by the arbitrator in the proper discharge of his duty.

Consulting a Lawyer.

Arbitration is sometimes resorted to as a means of adjusting disputes without invoking the assistance of the lawyer. There are many arbitration cases where legal aid can well be dispensed with; but the arbitrator should remember that he is entitled to consult his solicitor either for the purpose of drawing up his award or in connection with other matters arising during the proceedings. For instance, suppose a question arose during the hearing of a case as to whether a particular document was admissible in evidence, the arbitrator might take the opportunity during an adjournment of consulting his solicitor on the point. Again, for the purpose of drawing up his award, the arbitrator will do well to consult his solicitor. I had a case within my own personal experience where the arbitrator, an eminent engineer, was accompanied by his solicitor throughout the proceedings. I should say, however, that he asked the consent of parties beforehand. There should, however, be a limit to the delegation of his duties by an arbitrator. The parties before him want his opinion, not that of a lawyer. I knew of one case where the arbitrator, having procured a copy of the transcript of the shorthand note of the proceedings, submitted the whole matter to a member of the Bar to draw up his award for him. That was not, in my opinion, a proper discharge of his duty, although I do not know by what method it could be attacked, seeing that the award, as finally issued, was duly signed by the arbitrator and otherwise in order.

Power to State a Special Case.

It is well to remember that it is the right and privilege of every arbitrator to state his award in the form of a special case for the opinion of the Court. Thus, if a difficult question of law arises the parties may be willing that the arbitrator shall decide it. In that event he ought to decide it to the best of his ability. He must, however, if so requested

by one or other of the parties state his award in such a way that the Court will decide the point of law and allow the award to go in one event for the plaintiff and in the other for the defendant. It would also seem that if the arbitrator himself desires to have the assistance of the Court to decide a point of law he may state his award in the form of a special case on his own mere motion.

Costs.

The general rule in litigation being that the unsuccessful party must pay the costs, the principle may well be adopted by an architect sitting as arbitrator. *Væ victis* might almost be said to be a maxim of the law. But there is a rule of procedure with which arbitrators do not always appear to be familiar, and of which I should like to remind you. It is that if the defendant to an action pays into Court more than the amount recovered, he gets the costs incurred after the date of payment in. Again, if before action brought the defendant has tendered enough or more than enough to cover the claim, and the tender has been refused, the defendant gets the whole costs of suit. So, when acting as arbitrator, you should take into account any firm offer that the defendant may have made before the proceedings were commenced. For instance, suppose a builder claims £1,000 for extras, and before the reference the building owner makes a firm offer of or tenders £500. Having considered the case in all its bearings you come to the conclusion that £500 or even less is all that is due. You would then be fully justified in making the builder pay the whole cost of the proceedings.

Fees.

A brief word upon the sordid but not wholly unimportant question of fees. The arbitrator may fix his own fee if nothing is said about the matter when he undertakes the reference, but subject to this, that if he makes an exorbitant charge it can be recovered from him by action (Fernley *v.* Branson, 20 L.J.Q.B. 178). It is well, however, to give the parties some notion beforehand as to what the cost will be; so much for the retainer, so much for a view of the *locus in quo*, and so much *per diem* while the hearing lasts.

As to the amount to be charged, I need not say much. Suffice it that fees run high, and properly so, for an arbitration takes up all the working hours of the day and interferes considerably with the practice of a profession. That the judges recognise this fact appears from the case of Mason *v.* Lovatt, 23 T.L.R. 486.

In that case a quantity surveyor had acted as arbitrator in a dispute between a firm of plumbers and a builder. The reference lasted for twenty-two days, and the arbitrator was subsequently employed for thirteen days in considering the case. He also took the advice of a solicitor and counsel on certain points of law. He charged £527 10s., which included ten guineas a day for thirty-five days and £110 6s. for fees paid for legal advice. The District Registrar, disregarding the evidence of surveyors in good position, held that five guineas a day was sufficient, and reduced the above amount by £283 0s. 6d. The Court of Appeal set this judgment aside. Dealing with the surveyor's remuneration, Lord Justice Moulton said: "The evidence is all one way, that the price charged by him was fair for a person belonging to his profession and occupying the position which he occupied in that profession. The District Registrar was not entitled to set that evidence aside. The true standard, in my opinion, of what should be paid in such a case is what a fair-minded man in the position of the referee would have required if a bargain had been freely made beforehand. In this case there is no ground for supposing the referee has charged more than would have been required by a fair-minded man in a free bargain."

There is one satisfactory point about fees, and that is that the arbitrator should have but little difficulty in recovering them. He is entitled to keep back his award until the fees are paid. As a rule he saddles the party who is unsuccessful with payment of his fees, making them part of the costs.

PICTURE THEATRE, STOCKWELL.

The Stockwell Palladium, now in course of erection in the Clapham-road, S.W., will accommodate about 850. The architect is Mr. J. Waddington, jun., Creed-lane, Ludgate-hill, E.C., and the general contractors are Messrs. Waddington & Sons, Ltd.

ARCHITECTURAL SOCIETIES.

Bristol Society of Architects.

The annual general meeting of this Society was held at Messrs. Fortt's, The Promenade, Clifton. The election of the Council and officers for the Session 1914-15 resulted in the following gentlemen being elected:—President, Mr. G. C. Awdry, F.R.I.B.A.; Vice-Presidents, Messrs. G. H. Oatley, F.R.I.B.A., and J. Foster Wood, F.R.I.B.A.; members of the Council, Messrs. G. C. Lawrence, A.R.I.B.A., M. A. Green, F.R.I.B.A., R. C. James, F.R.I.B.A., W. S. Skinner, F.R.I.B.A., T. H. Weston, F.R.I.B.A., and Sir Frank Wills, F.R.I.B.A.; Associate members of the Council, Messrs. A. B. Botterill, A.R.I.B.A., and B. Wakefield, Licentiate R.I.B.A.; Hon. Secretary, Mr. C. F. W. Dening, F.R.I.B.A. Mr. Mowbray A. Green proposed, and Mr. G. C. Awdry seconded, a vote of thanks to the retiring President, Mr. G. H. Oatley, which was carried with acclamation. Both spoke of the great interest Mr. Oatley had taken in the Society and of the time he had given as the local representative on the Council of the Royal Institute of British Architects. Mr. A. B. Botterill consented to act as Hon. Treasurer for another year, and a hearty vote of thanks was accorded to Mr. Botterill and Mr. Dening for the services they had rendered to the Society. It was provisionally agreed that the annual excursion should be to Frome, Mells, and Longleat.

A presentation of the prizes in the recent measured drawings competition took place, the successful students being Mr. H. E. Todd and Mr. W. L. Haile.

Architectural Association of Ireland: Mr. W. H. Goodyear's Architectural Theories.

A meeting of the Architectural Association of Ireland was held in the Civil Engineers' Hall, No. 35, Dawson-street, Dublin, on the 26th ult., Mr. Geo. F. Beckett, M.R.I.A.I., in the chair. The house list of members willing to serve as officers and on the Committee of the Association was read, and scrutineers of the ballot were appointed. The following were elected members of the Association:—Messrs. J. J. Bruntz and Stanley Grant.

The Rev. H. Browne, M.A., read a paper on "Mr. W. H. Goodyear's Architectural Theories," the object of the lecture being to pave the way for Mr. Goodyear's approaching visit to Dublin, which has been arranged for the month of May by the Classical Association, in conjunction with the architectural societies of Ireland. The lecturer apologised for not being an architect, and hoped that, under the circumstances, his temerity in coming before a society of architects to lecture on architectural theories would be forgiven. He would have to deal not merely with æsthetic principles, on which all might claim to share, but also with somewhat technical points. In the latter case he should merely try to lay before the audience the views of Goodyear, leaving them to the consideration of those who had knowledge and experience of such matters. The slides would illustrate curvatures and other refinements universally admitted to exist in Greek temples; but this would be preparatory to the consideration of the important question whether analogous refinements exist in the best mediæval architecture, and, if so, whether it is to be admitted that the practice of introducing them was due to the influence of Classical traditions. He would deal first with departures, in plan and elevation, from strict geometrical forms; then with leaning (*i.e.*, overhanging) façades in Italian cathedrals; and, lastly, with the widening refinement in the lofty naves of Gothic cathedrals of Northern France. This, he added, might be claimed as the most characteristic and in every way the most important of Goodyear's theories.

The lecturer regretted that with regard to the great English cathedrals (which were undoubtedly built under French influence and in some cases by French architects) no plumbings and measurements for this widening refinement have as yet been taken or at least published. But even in the examination of photographs he thought he had been able to detect very clear evidence in two cases, those of Salisbury and Canterbury, of the refinement, and evidence which he believed could not be accounted for by camera distortion. He trusted that a more complete and satisfactory investigation would be undertaken at some not distant date.

It was also gratifying to those who believe in the truth of Mr. Goodyear's methods and results that news had just come to hand that an American Committee of experts, appointed to report on the whole matter, have done so in a very favourable sense. The lecturer concluded by saying that he had no doubt that Mr. Goodyear's stay in Dublin would be an agreeable one, both for himself and for those who would assist in the reception which was being jointly organised by the different societies.

Mr. Hudman proposed, and Mr. J. Geoghegan seconded, a vote of thanks to the lecturer. The Chairman, in putting the motion, stated that the President was absent through ill-health. They all welcomed Professor Browne, who had played a leading part in arranging for the keenly anticipated visit.

The resolution was passed with acclamation.

ARCHITECTURE AND THE STAGE.

"SEALED ORDERS," now being produced at Drury Lane, does not appear to have suffered through being revived. As we said in our former notice, most of the scenery is remarkably good. From the first scene, depicting a cottage and garden, to the airship scene, they are all excellent of their kind. From our point of view, the background, showing a corner of Dean-street, was probably the best. The "Chelsea Flower Show" gives a very good idea of the real thing, but the scene outside, on the Embankment, is hardly up to the same standard as the one in Dean-street.

It goes without saying that the stage management—an important item in this case—and the acting are most satisfactory. A large audience evidently appreciated the performance thoroughly.

CORRESPONDENCE.

The New Charter and Education.

SIR,—With the new proposals of the Council of the R.I.B.A. now before us, it will be well to consider them carefully to see where they lead.

The creation of a new class to be called "Registered Architects" does not appear to be anything but another body of Licentiates under another name. The similitude is increased by the fact that, admission being under a time limit, the Registered Architects will be a dying corps, in the same way that the Licentiates are now non-corporate and moribund. There seems to be no necessity for these duplicate bodies. Roses by other names could smell no sweeter, nor, it is to be believed, would Licentiates under the style "Registered Architects."

The class of "Chartered Architects" is to be limited to corporate members of the Institute, who already have an excellent Charter which sets very high ideals before them. These ideals, unfortunately, seem to be overlooked and forgotten in these days of politics, and this letter will have served if it does no more than remind us of them.

The widening of the base of the Institute by the creation of another limited body, by the admission of unexamined and unqualified, and therefore presumably uneducated, persons is undesirable, and architects who for their own reasons do not care to take the trouble to educate themselves to such a small extent as to qualify by means of "what after all is an extremely elementary examination" must be considered, now and always, undesirable within the Institute and a lowering of its ideals and its status. The Special Examination is specifically designed to meet the needs of architects in practice and senior assistants who desire to become corporate members, and these architects have no legitimate excuse for shirking this entrance examination, nor should another opportunity be extended to them to do so.

This proposed new Charter seems to lead us nowhere. Unless the Register is open by examination to all architects always, and unless it has a standing Registering Board with representatives from all outside bodies on the Board, the object of Registration by charter or by any other means seems to have been missed, when it is remembered that the purpose of Registration is for the widest general control of the profession and to ensure to the public that architects whom they employ shall be educated and qualified. Therefore it is

essential that all persons on the Register shall be qualified in a recognised way—not merely by admission to a Register. Granted that admission in the first instance must be without examination in order to allow all *bonâ-fide* architects to become registered, still the time limit and other clauses appear to do away with admission except through the portals of the Institute examinations, which means Registration only by means of the Institute and the Institute only. Surely a very selfish and undesirable circumstance. The corporate membership of the Institute should be, and should be kept, of a higher status than any Register. Let us keep some ideals! The Register should be open to everyone, and the examination, *per se*, for the Register, even if held by the R.I.B.A., as examining body, should only admit to the Register and not to corporate membership of the Institute.

For these reasons it becomes necessary that we should examine the proposals most carefully.

It has been said, and may be said again, that lack of architectural education is at the root of all the troubles now bothering the profession. It may be said also that if every architect were educated there would be no need, apart from professional practice and control, for any Register. It should also be remembered that, in these British Isles, where construction of all kinds is so carefully supervised by District Surveyors all over the country, there is not the same dire need for Registration as in the Colonies, which may account for some of the more extremely unqualified persons being able to practise, since they are so efficiently supervised. If that is so, it is to be sincerely regretted, and is another reason why architectural education should not be lost sight of under all these questions of Registration and charter. Education should be pressed on with all the vigour of which we are capable. A partial and emasculated Register will not meet the case; a comprehensive Register might, but education would meet it.

Since it is said there are to be three new classes created, I sign myself by all six, and remain,

F.R.I.B.A.; A.R.I.B.A.; LICENTIATE R.I.B.A.; CHARTERED ARCHITECT; REGISTERED ARCHITECT; AND KING'S ARCHITECT.

P.S.—Is it not ridiculous?

The Building Trade Dispute.

SIR,—From the information in the Press it would appear that the parties in this matter—viz., the Master Builders' Association and the trade unions—seem so near to adjustment of this deplorable dispute that it would be a wicked thing if stiffness and hauteur or even militancy on either side should cause a prolongation of the loss and suffering which we read of. I venture to make a suggestion, which I am prepared personally to back, that the master builders, having expressed their willingness to accept the guarantees which the National Federation Conciliation Board have promised, the remaining minor questions, which are only matters of detail, should be referred, and that forthwith, to arbitration (and it is certain that a suitable arbitrator can be found and agreed to); and that all parties be urged to adopt this course, and that in the meantime (the guarantees holding good) the trade and workmen resume business right away, leaving the arbitrator to settle all matters remaining outstanding for settlement. Such settlement or decision by arbitration must be loyally accepted and acted upon by all parties. I trust this suggestion may have your support, and the public should use its big stick upon any party refusing to arbitrate.

HOWELL J. WILLIAMS.

Registration: "Act" or "Charter."

SIR,—When the Institute was proposing to promote Registration by statute it was stated that one insuperable obstacle to their doing so was an alleged disability due to the fact that Licentiates could not vote on the matter, and that before the Institute could proceed further with Registration that disability must be removed.

If the Institute cannot legally promote statutory Registration because of this alleged disability, how can they properly proceed with any other form of Registration under the same circumstances? Are they sure that they are not acting *ultra vires*, as they have been on the point of doing in other matters on two other occasions?

Personally, I am more convinced than ever that the position of the Licentiates does not constitute a disability, and that there is nothing to prevent the Institute from promoting statutory Registration if they choose to do so.

However that may be, I think that the following comparative statement of the effect of the respective proposals for Registration by "statute" or by "charter" may be of particular general interest and value at this juncture.

The Society is promoting a Bill in Parliament for the Statutory Registration of Architects, *covering the whole profession, irrespective of membership in any architectural bodies, in the interests of the community.*	The Institute is promoting proposals for a new Charter, to enable it to establish a voluntary register of "qualified" architects, *in the interests of the Institute.*
Registration by statute, as proposed by the Society—	*Registration by Charter*, as proposed by the Institute—
(*a*) Would establish a register of persons *recognised by law* as qualified architects.	(*a*) Would establish a register of persons *recognised by the Institute* as qualified architects.
(*b*) Would establish a governing body representative of the whole profession with administrative and disciplinary powers, enabling them (*inter alia*) to strike architects off the roll for professional misconduct, and so prevent them from continuing to practise as architects.	(*b*) Would establish a Standing Committee with powers restricted to reporting to the Council of the Institute, whose utmost disciplinary action would be limited to removing members from the register for professional misconduct, a proceeding which would not prevent them from continuing to practise as architects.
(*c*) Would protect *all* vested interests.	(*c*) Would protect *certain* vested interests only.
(*d*) Would give all qualified persons the right to register.	(*d*) Would reserve to the R.I.B.A. Council the right to veto qualified applicants for Registration.
(*e*) Would prevent unqualified persons from practising as architects and from recovering fees.	(*e*) Would not prevent any person, qualified or otherwise, from practising as architects. *Thus, an abuse which it is one of the aims of statutory Registration to stop, would be perpetuated under such a voluntary system of Registration.*

C. MCARTHUR BUTLER
(Secretary of the Society of Architects).

The Ancient Monuments "Department."

SIR,—The use by H.M. Office of Works of the term "department" to describe the Ancient Monuments branch, as mentioned on p. 433 of your last issue, while having no warranty from fact at present, yet from the nature of the work and its importance can nevertheless not long be delayed in actuality. For if not the public, at any rate, those interested in archæological and historical matters, will require assurance that the work of preservation shall be in capable hands and shall not be at the mercy of every idle bureaucratic fancy. The public is strangely ignorant of the scope of the work now being carried on by the State in these matters. Leaving aside the Royal Commission on Historical Manuscripts and the work in connection with museums, there are three Royal Commissions investigating our national monuments in addition to the actual work of preserving them by the Ancient Monuments branch.

The work of the Ancient Monuments branch, however, does not cover all historic buildings in charge of the Office of Works. Hampton Court Palace, Windsor Castle, Somerset House, and Inigo Jones's Banqueting Hall do not figure in the report of the Inspector of Ancient Monuments. On the raising of the branch to a department these, while remaining under present arrangements for all matters relating to their occupancy and use, should, like the War Office buildings, come under the new department in connection with alterations and additions affecting their historic character. With this additional work alone there would be no excuse for their refusing the creation of the promised department, the present branch being in point of number of technical assistants larger than the Office of Works itself (excluding its two provincial branches) thirty years ago.

In the same way that the Royal Commissions on Historic Monuments would find much of the work done by the Ancient Monuments branch of assistance, so much of the investigation undertaken by them would be useful in the branch. The work of the Commissions will continue for a number of years, and it is questionable whether it should ever finally close down. The year 1700 by which they are limited at present is much too early, and when all monuments prior to that date have been catalogued later ones should be taken in hand. In addition the collection of material for the official guide-books promised by the Inspector of Ancient Monuments in his Report for the year ending 1911 is eminently work for the investigators attached to the Royal Commissions.

Such being the position of things, why should not the Government thoroughly organise the whole of the work in connection with Ancient Monuments so that there shall be no overlapping or loss of efficiency. The formation of a separate department by abolishing the Royal Commissions and amalgamating their staffs with the new department would present no difficulties and would in the long run be more economical. There is at hand in the Royal Commissions the nucleus of an interested and sympathetic secretariat. The Inspector and the Assistant Inspectors of Ancient Monuments would have a staff of trained investigators under them to continue their present inventory work, and so carry out much other incidental work for which now they have no staff. While finally there would be the architectural staff of the department with a Principal Architect at its head, whose appointment should be such that complete reliance could be placed in his work in connection with our national monuments. A step such as this would be another move forward in the direction of a Ministry of Fine Arts.

MONUMENTA VETUSTA.

Temporary Clerks of Works and Others.

SIR,—Your editorial note at the end of the letter of "A Temporary Clerk of Works" in your last issue would have some justification if the conditions of service in H.M. Office of Works were known before one accepted an appointment there and if those conditions remained substantially unchanged except as far as they would apply to future entrants. Speaking of the conditions affecting temporary architectural assistants, I can say confidently that the conditions are not made known before entrance, and it takes an assistant a long time to learn them and to realise their full significance, as they dwell not in any one document, but are buried in a series of official files, to which he is not allowed access. It is generally at some crisis when some wonderful new scheme, by which the Treasury gives an extra twist to the screw, is brought into being that he really learns his future prospects. The *Builder* would be doing a service to the junior members of the architectural profession if it would obtain the conditions of service for temporary assistants as far as they are known and would publish them.

A TEMPORARY ARCHITECTURAL ASSISTANT.

"The Cottage: Past and Future."

SIR,—Your leading article in the issue of the 3rd inst. is so full of matter with which many cannot agree that I should be glad of an opportunity to answer some of the points raised.

The subject is one which has always interested me very much, and it was therefore with pleasant anticipations that I settled down to read it. Before very long, however, I looked at the date of publication to see whether perhaps the article was written under cover of the first of this month, but, alas, the author seems to be serious!

It is not easy to answer the main issue raised, that of flat roofs, as far as appearance goes, as the writer is in the comfortable position of saying, "You only object because it is new to you." From a practical point of view, though, I do not think the author can hold his position. If with a pitched roof the plate or studding is kept 5 ft. from the floor, it is quite sufficient to enable one to stand upright at the sides, and in the case of studding it affords opportunity for cupboards, which are invaluable of course. What are the means of making sound flat roofs "with no greater expenditure"? I would always sooner trust a properly boarded and felted and tiled roof, both for warmth and weather-resisting qualities, to a cheap flat one.

As regards the materials for use for external walls, I believe I am right in saying that you, Sir, have yourself suggested in your columns that timber construction is one satisfactory way of solving the cheap cottage problem. I

emphatically disagree with the writer of the leader when he says that such buildings are not fit for a hard winter—they are as warm as any brick-built building. When he proceeds to invite us "just to imagine" the effect on a landscape of tarred cottages, I begin to wonder whether he has ever seen English country farms. What more pleasing, more in harmony with nature, can one imagine than these tarred buildings, with their fine tiled roofs?

I, for one, am a strong believer in hollow walls on account of their dryness and warmth, and practical experience has shown me that rough-casting or cementing will not make 9-in. walls weatherproof.

It would be interesting to know the author's definition of "stock bricks," if yellow and buff bricks are a separate tribe. I cannot see why the latter should be "cryingly artificial in appearance," and have come across plenty of pleasing examples of their use.

The author of the article suggests that in time we might come to look upon a flat-roofed cottage as picturesque, just the same, I suppose, as a child may in time come to regard castor oil as a joy!

QUESTIONER.

Railings, Guildford.

SIR,—May I trespass on your valuable columns to ask you to assist in recovering certain fragments of considerable architectural interest?

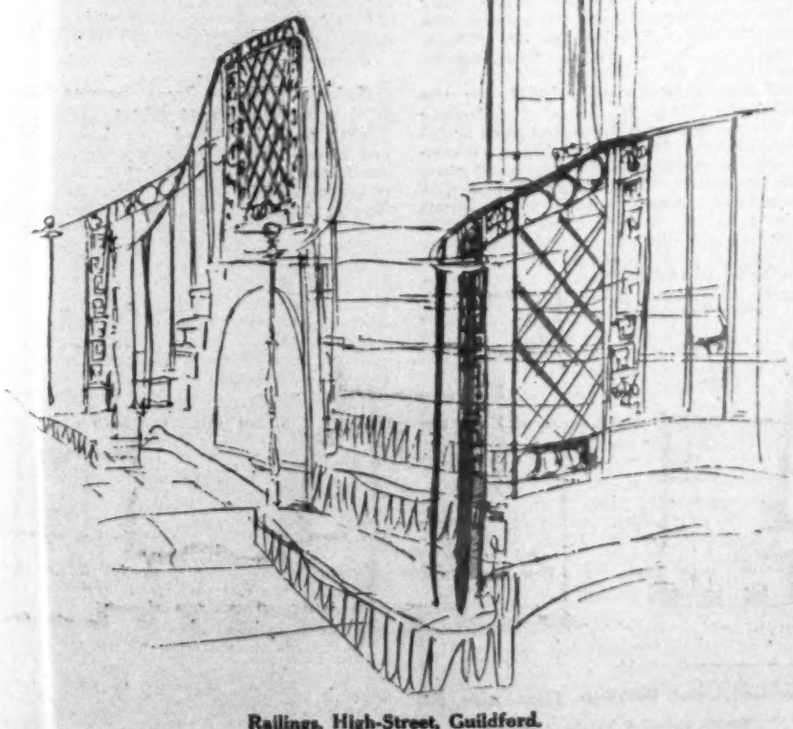
There was, until a few months ago, a very beautiful set of railings, steps, and doorway in the High-street, Guildford, of which I enclose a very inadequate drawing, which will serve the purpose, however, of reminding your readers of the doorway. To many of them it must be well known.

It is, of course, certain that as time goes on and commercial premises take the place in this magnificent street of residential, that some of these things must be removed; but it is hardly believable that in a place of some culture, as I understand Guildford is, that they should be destroyed. However, all I have been able to recover is a small portion of the ironwork.

I appeal to any of your readers who may have photographs, measured drawings, or anything that may help me to give a suitable setting to the only fragment that remains, and so to rescue from oblivion a piece of the work of one of the cleverest designers of a more enlightened time.

I find there are in Guildford six architects (not counting partners), an archæological society, a technical school, and thirty members of the West Surrey Society, who, I understand, have the preservation of ancient buildings as one of their endeavours, and at least five shops where objects are sold of which the principal interest is their real or supposed antiquity.

H. FALKNER.



Railings, High-Street, Guildford.

GENERAL NEWS.

Victoria and Albert Museum.

The Board of Education announce that a loan exhibition of Indian paintings has been arranged in the Indian Section of the Victoria and Albert Museum (Lower Gallery, Room 4). The exhibition consists of more than 200 characteristic works of the New Calcutta School, generously lent by the Indian Society of Oriental Art, Calcutta, together with examples by artists of the same school lent by Mr. Havell and Dr. Coomaraswamy. In addition, her Majesty Queen Mary has been graciously pleased to lend an important example of the work of Abanindro Nath Tagore, for some time Principal of the Calcutta School of Art and one of the leaders in the movement. The New Calcutta School represents the development which has taken place in Indian art since 1896, when Mr. E. B. Havell reorganised the instruction given in the Calcutta School of Art on Indian lines and brought together a representative collection of examples of Indian painting, sculpture, and architecture for the purpose. The exhibition will remain open until the end of May.

Crystal Palace Engineering Society.

The Wilson Premium for the best paper read before the Society (affiliated to the Society of Engineers, Incorporated) during the present session has been awarded by the Council to Mr. A. E. B. Graham for his paper on "Construction of the Uganda Railway." Other papers read during the session were "Pioneer Engineering," by Mr. R. H. Steed, and "Engineering Progress in Egypt," by Mr. E. H. Sharteni. The premium was presented to Mr. Graham by Mr. Cyril S. Cobb, M.V.O., Chairman of the London County Council, on the occasion of the 124th Distribution of Certificates of the School on the 8th inst.

Board of Architectural Education of the R.I.B.A.

The Board of Architectural Education of the Royal Institute of British Architects announce that the designs submitted by the following students who are qualifying for the Final Examination have been approved:—

Subject XII. (*a*).—"*Design for a Lighthouse.*"

I. Omar (Egypt)

Subject XIII. (*a*).—"*Design for a Fireplace.*"

W. Alison
W. J. Allcorn
G. Allen
J. Barford
G. Bennett
W. B. Binnie
R. Bowes
C. J. Brooks
P. Butt
G. W. Callendar
G. E. Charlewood
C. C. Cheek
W. T. Ching
C. J. Clark
G. A. Cosser
G. Davidson
D. C. Derry
R. A. Duncan
G. M. Eaton
T. C. Evans
E. Fincham
A. Forbes
R. Frater
J. S. Fyfe
B. George
H. T. Goodwin
H. F. Gosling
R. G. Graham
J. D. Grant
H. V. Hague
R. B. Hall
A. B. Hamilton
G. L. Head
M. Hendry
L. E. Henshall
T. W. Herford
J. D. Hossack
S. B. Howard
J. H. Jacob
H. N. Jepson
A. G. Johnson
W. O. Jones
H. Z. Kassem
A. D. Kellock
M. D. Koch
G. A. Langdell
E. C. Lavender
G. S. Leadon
R. M. Love
S. H. Loweth
H. M. Luyken
J. Macgregor
A. L. Macmillan
R. H. Maddock
A. E. Maxwell
J. R. McKay
H. A. K. Medd
R. S. Moore
A. L. Mortimer
D. G. Mowat
E. B. Mussmann
O. Newbold
A. H. Owen
C. L. Pace
W. F. Pennington
A. W. Robertson
N. S. Robinson
J. A. Rose
C. Rowntree
H. A. Ryan
T. A. Sanders
L. H. Shattock
G. Shenstone
A. Silcock
A. T. Spence
G. P. Stainsby
A. E. Stott
J. A. C. Taylor
H. J. Tebbutt
A. Thorpe
R. A. Threadgold
H. S. Triscott
J. B. M. Walch
D. W. Walker
H. F. Walker
H. M. Whitehead
F. Williamson
J. F. Wilson

Subject XIII. (*b*).—"*Design for a Foot Bridge.*"

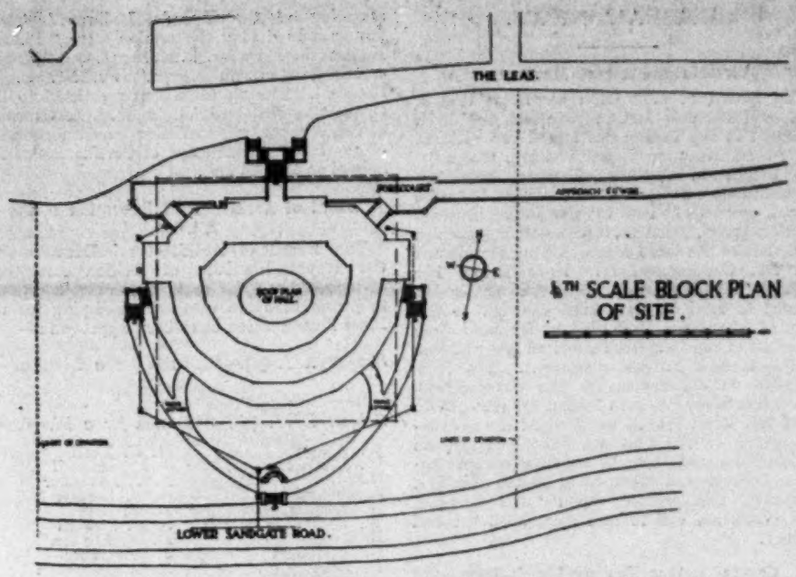
W. A. C. Adams
W. Alison
H. Andrew
C. O. Ap-Gruffydd
J. R. Armstrong
C. H. Aslin
H. Bagenal
F. A. Barley
J. Carey
E. L. Carreras
R. Cawkwell
H. L. Charles
H. E. Crossland
J. Dickinson
T. W. Dowsett
J. C. Farrer
W. E. Foale
L. S. Ford
F. E. Gooder
H. T. Goodwin
C. Grellier
G. L. Head
E. C. Lavender
A. A. Macpherson
J. B. Matthews
J. Moore
W. N. I. Moscrop
J. Palmer
M. Robertson
G. A. Rose
G. P. Stainsby
J. C. Swallow
W. E. W. Terrill
L. C. P. Toothill
P. G. White
C. H. Woodhouse
H. Wyatt

The Bar-Gate, Southampton.

At their meeting on April 8 the Town Council considered a letter addressed to them by the First Commissioner of Works, intimating that the proposal to remove the Bar-Gate has been brought to the notice of the Ancient Monuments Board, who are of opinion that the structure is a monument whose preservation is of national importance, and expressed a hope that the project would be relinquished. A motion to take a poll of the townsfolk was defeated, and in the result the Committee's report in favour of removal was also negatived by twenty-eight to twelve votes.

Roman Pavement, Gloucester.

In the course of rebuilding in Northgate-street, Gloucester, a fine square of Roman pavement of about 16 ft. by 16 ft. in dimension has been discovered. The pattern is worked in natural stone mosaic, with white flint, blue lias, and red brick. It is conjectured that the pavement is of the second or third century in date; it will be carefully taken up and laid in the basement of the new premises by Messrs. J. R. Pope & Sons, who are erecting the buildings on the site.



Band Pavilion, Folkestone.

ILLUSTRATIONS.

Folkestone Band Pavilion: First Premiated Design.

THE site is on the cliff between the Leas and the Lower Sandgate-road. The main floor was kept about 35 ft. below the level of the Leas so that the view from the latter should be obstructed as little as possible. The main hall seats about 1,500, 1,000 on the floor of the hall and 500 in the gallery. The platform accommodates an orchestra of fifty performers. On the floor below is a smaller hall for bazaars, etc., with cloak-rooms, lavatories, and a service-room. The band-room, bandmaster's room, and music store are placed below the stage in a mezzanine.

Below the smaller hall again are two tiers of open shelters.

All floors are connected by staircases on both sides of the building. Practically the whole of the roof is available for promenade, and is reached by a bridge and flight of steps from the Leas.

The main approach is from the east by a sloping path from the Leas along the cliff; other approaches are also provided from the Lower Sandgate-road below. The building was to be constructed of steel faced with Portland stone above the main terrace level and with small red bricks below; the roofs and floors were to be of ferro-concrete construction. The main points aimed at in the design were to provide as much seating accommodation as was compatible with the proposed cost (£20,000), and to give as extensive a view as possible over the sea from all floors.

The Corporation now has an enlarged scheme under consideration.

PALMER-JONES & GRANT.

Ewelme Park.

THE site of this house is on the edge of the Chilterns, in Oxfordshire, and commands a panorama of the Thames Valley and country westwards, with a wide view towards Huntercombe Golf Links on the south. The spreading type of plan was adopted partly with the object of providing a large sheltered terrace and partly to afford facilities for collecting the maximum quantity of rain-water by means of the big roof surfaces, as there is no water near the estate. The high wall and pergola were also arranged for protection on the exposed west side. The main axis was set square through the old yew walk, which is a prominent feature of the lay-out. The gallery was planned as a variation on the orthodox hall, and forms a contrast with the open timber roofed drawing-room, which is adapted for use as a ballroom. All the bedrooms are protected from westerly and south-westerly gales, and the loggia and a large lounge over same, together with the drawing-room and boudoir, enjoy the west view.

The walls are faced externally with rough-floated plaster, with dressings, quoins, chimneys, etc., of Doulting stone. The windows are all in oak, excepting some which are stone-mullioned; and most of the internal joinery is in oak including the floors. On the outer faces the windows are untreated, but internally all the joinery and floors are stained with brown "Solignum," which has the effect of toning down the oak without deadening the grain.

The steel casements and leaded glazing were supplied by Messrs. W. James, of Willesden; the electric lighting and pumping plant by the General Electric Company, of Queen Victoria-street; the sanitary goods, range, and grates were supplied by the City Iron Company, of Thames-street; special made eaves gutters and stack pipes by Messrs. Elsley; and the locks and furniture by Messrs. James Gibbons; the hot-water supply and heating were carried out by Messrs. Rosser & Russell.

The general contractors were Messrs. F. M. Thompson & Sons, of Louth, Lincolnshire, who also carried out terraces and pergola and the roadwork. The quantities were prepared by Messrs. Bare, Leaning, & Bare; and the architect for the work, including the garden and terraces, was Mr. L. Stanley Crosbie, F.R.I.B.A., of 3, Southampton-street, Bloomsbury.

Norwich Union Buildings, Fleet-Street, E.C.

THIS building, of which we illustrated the drawings on June 14, 1912, is now completed. We consider the design of a building occupying a long frontage to a main street must be a subject of interest to architects and are glad to give further illustrations of it.

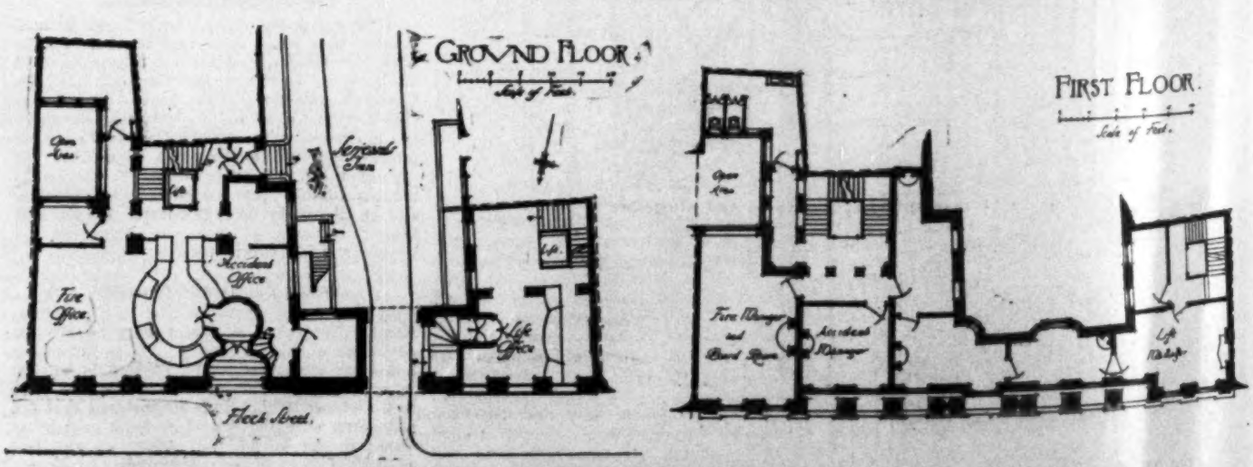
The problem facing the architects may be briefly recapitulated. A site of considerable length and small but varying depth, traversed by a right of way of rigid fixity leading to Serjeants Inn. The centre line of this right of way was of necessity the pivot of treatment for the façade, and symmetry had to be obtained without varying a fraction of an inch from the original position of the arch covering the right of way. The style adopted was late Italian Renaissance treated with later refinements. The public offices of the sister societies (Fire and Life) are on the ground floor, on the first floor are managers' rooms and board-room, and the various departments are housed on the other floors, including a particularly lofty and well-lighted basement.

The architects for the new building were Messrs. Howell & Brooks, architects and surveyors to the "Norwich Union" Societies; the sculptor responsible for the statuary as well as for the architectural enrichments was Mr. A. Stanley Young, R.B.S.; the general contractors were Messrs. Patman & Fotheringham; and a list of the sub-contractors is as follows:—

Aston Construction Co.—Steelwork.
Acme Flooring Co.—Wood floors.
Art Pavements, Ltd.—Parquet flooring.
Bath Cabinet Makers—Desks and joinery.
Benson & Co., Ltd.—Electric wiring and telephones.
Bostwick Gate Co.—Gate.
Brawn & Co.—Iron railing and steps.
Bromsgrove Guild—Lift enclosures and metal screens.
Carter & Co.—Lavatory tiling.
Chatwood Safe Co.—Strong-room doors.
Edgington & Co.—Flagstaffs and flags.
Fenning & Co.—Marble work.
General Electric Co.—Electric light fittings.
Haden & Sons—Heating.
Howard & Co.—Metal skylights.
Jackson & Sons—Plaster work.
Kelley & Co.—Stained glass.
Kleine Floor Co.—Concrete floors.
Leyland Rubber Co.—Rubber flooring.
Mellowes—Roof glazing.
Nautilus Fire Co.—Grates and hearths.
O'Brien Thomas—Grates.
Strode & Co.—Bronze enrichments.
Stuart & Co.—Granolithic and concrete work.
Waygood & Co.—Lifts.
Wragge & Co.—Bronze and iron sashes.

Model of Sculpture Group, Norwich Union Insurance Offices.

THIS group is entitled "Prudence, Justice, and Liberality," and has been carved out of one block of Portland stone (9 ft. by 6 ft. size of group). The sculptor, Mr. A. Stanley Young, R.B.S., in addition to carrying out



Norwich Union Buildings, Fleet-Street, E.C.

Messrs. Howell & Brooks, Architects.

Norwich Union Insurance Buildings, Fleet-Street, E.C.: "Prudence, Justice, and Liberality."
Model of Sculpture Group to Central Feature.
Mr. A. Stanley Young, R.B.S., Sculptor.

the sculpture group to central feature, prepared the models from which, and under his superintendence, the ornamented keystones, capitals, and festoons were carved.

It was with the intention of securing a uniform quality of expression that the architects entrusted to the sculptor the execution of the whole of the sculptural details.

REGISTRATION OF ARCHITECTS IN QUEENSLAND.

THE *Brisbane Telegraph* of March 3 states that Mr. Chambers, the President of the Institute of Architects, waited on the Minister for Public Works (Hon. W. H. Barnes) on March 3 with a request that a Bill should be introduced for the Registration of Architects. The Institute considered that such a step would bring about an advancement in architecture, and argued that it was necessary in view of the modern advances in construction and sanitary and engineering science. It was claimed that similar action had been, or was about to be, taken in the southern States. Mr. Barnes was told that Registration would bring to the profession better-qualified and more highly-skilled men; would protect the public against incompetence, inexperience, collusion, fraud, and wasteful expenditure; would secure a greater protection of public health and safety by scientific ventilation of buildings and proper fire-resisting construction, and by an expert knowledge of sanitary science generally; and would reveal to the public the experienced competent against the inexperienced and incompetent. On behalf of the architects it was claimed for Registration (*a*) the placing of the architectural profession on a sound and recognised basis; (*b*) the direction of architectural education in the right channels, as mentioned previously; (*c*) examination of candidates before admission to the ranks of registered architects or the issuing of a diploma; (*d*) authoritative right to deal with all matters pertaining to the profession—that is, with the rights, privileges, emoluments, and discipline of registered architects.

Mr. Chambers handed to Mr. Barnes a copy of a draft Bill which had been prepared by the Institute.

The Minister promised Mr. Chambers that the matter would be submitted to the Cabinet, remarking that until the details of the Bill had been looked into it would be quite impossible for him to make any promise. Incidentally, Mr. Barnes indicated that the Government were contemplating action with regard to certain buildings. He remarked that in travelling round he had noticed that in some streets not far from the principal portions of the cities of Brisbane and South Brisbane buildings had been erected in such a way as to be a menace to health and a danger to the public. He had noticed more particularly one street in which fourteen houses had been built with scarcely any division between them. There was no privacy, and altogether it was a condition of things that should not be allowed to be continued.

Action had been taken by the Government in the direction of seeing that such a condition of things should not be allowed in the future. The present position was that land could not be cut up into less than 16-perch allotments, but, so far as he could ascertain, there was nothing to prevent a buyer of such allotments from putting dwellings on smaller areas. In a climate such as Queensland's he thought an effort should be made to prevent such a state of affairs, especially when there was plenty of room available.

BOOKS RECEIVED.

USEFUL MINERALS AND RARE ORES. By Alexander McLeod. (London: Chapman & Hall, Ltd. 5s. 6d. net.)

DILAPIDATIONS AND FIXTURES. By Banister Fletcher. (London: B. T. Batsford, Ltd. 6s. 6d.)

HOW TO FRAME A HOUSE. By O. B. Maginnis. (New York: The William T. Comstock Company. $1·50.)

INVESTIGATING AN INDUSTRY. By William Kent. (London: Chapman & Hall, Ltd.)

FIFTY YEARS AGO.

From the *Builder* of April 16, 1864.

GARDENING and architecture, like all the fine arts, have much in common. And that department of architecture which belongs more exclusively to the garden has especially a great affinity with gardening in its broader principles. In fact, there is much more relation between the two than is usually admitted, or than the ordinary products of practitioners in either art would at all justify us in believing.

[***It would have never occurred to us to define gardening as a fine art or to suggest that it had a close affinity with architecture.—ED.]

SCHOOL, BALHAM, S.W.

An elementary school, to accommodate nearly 1,000, is being erected in the Balham High-road. Mr. W. E. Riley, F.R.I.B.A., Superintending Architect of the London County Council, is the architect, and the general contractors are Messrs. G. E. Wallis & Sons, Panton-street, S.W., and Maidstone.

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MEETINGS.

SATURDAY, APRIL 18.

Edinburgh Architectural Association.—Visit to H.M. Dockyard, Rosyth.

MONDAY, APRIL 20.

Surveyors' Institution.—Paper by Mr. Dawbarn Young entitled "Comments on the Land Enquiry Committee's (Urban) Conclusions." 8 p.m.

Institute of Sanitary Engineers.—Mr. E. A. Lees on "The Birmingham Waterworks." 8 p.m.

TUESDAY, APRIL 21.

Society of Architects.—Thirteenth annual dinner, at the Hotel Cecil. 6.30 for 7 p.m.

Institution of Civil Engineers.—Mr. Frederick William Cowie, B.A.Sc., M.Inst.C.E., on "The Transportation Problem in Canada and Montreal Harbour." 8 p.m.

Royal Institution of Great Britain.—Mr. Walter Wahl on "Study of Matter at High Pressure." 3 p.m.

Junior Art-Workers' Guild.—The Easter Revels. 8 p.m.

THURSDAY, APRIL 23.

Royal Society of Arts (Indian Section).—Mr. George C. Buchanan, C.I.E., M.Inst.C.E., Chairman of the Rangoon Port Trust, on "The Port and City of Rangoon." 4.30 p.m.

Carpenters' Hall.—Sir Hugh Beevor, Bart., on "English and German Forestry." 8 p.m.

Concrete Institute.—Paper by Mr. John A. Davenport and Professor S. W. Perrott on "Sand and Coarse Material and Proportioning Concrete." 7.30 p.m.

Institution of Electrical Engineers.—Mr. H. W. Firth on "Electrification of Railways as Affected by Traffic Considerations." 8 p.m.

FRIDAY, APRIL 24.

Institution of Mechanical Engineers.—Paper by Mr. L. Rothera, B.Sc. 8 p.m.

COMPETITION NEWS.

It must be understood that the following paragraphs are printed as news, and not as advertisements; and that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

The list of current Competitions is printed on page 483.

The Civic Exhibition of Dublin: Conditions of Competition for a Plan of Dublin.

Geometrical plans and sections are to be prepared to scales based on British standards of measurements and the General City Design may be drawn on the scale of 12 in. to the mile or 6 in. to the mile.

Outline plans of particular portions of the town plan, treated in fuller detail, are to be as far as possible upon the scale of 25 in. to the mile, and street sections upon the scale of 1 in. to 20 ft.

Housing plans, showing treatment suggested for existing tenements and types of new cottages proposed, to be upon the scale of ½ in. to 1 ft. Perspectives are not desired.

The drawings shall be mounted on linen and on stretchers, and these should not exceed the dimensions for the General City Design.

A descriptive report, typewritten or printed, must accompany the design, and must be provided with a summary of its main conclusions, recommendations, and estimates.

The designs and report shall be submitted without any distinguishing name, mark, or motto, but a sealed envelope containing the name and address of its author must be securely attached to the General City Design. This envelope will be opened, after adjudication, by the Lord Lieutenant or his deputy.

Any attempt by an author to disclose his identity in any other manner will disqualify his design.

The designs must be delivered carriage paid on or before September 1, 1914, at the following address:—Town Planning Competition, The Civic Exhibition, Linenhall Buildings, Dublin, Ireland.

After adjudication the designs and reports may be exhibited in the Civic Exhibition, or elsewhere under the auspices of its Committee.

The premiated design and report shall thereafter become the property of the Housing and Town Planning Association of Ireland without further payment, and shall be deposited in its collections for reference and for such further exhibition as its Council may at any time decide.

The designs will be submitted to the following adjudicators, whose awards shall be final:—Professor Patrick Geddes, Edinburgh, Scotland; Mr. John Nolen, M.A., Sc.D.F.A.S.L.A., Cambridge, Mass., U.S.A.; Mr. Charles J. MacCarthy, F.R.I.A.I., City Architect, Dublin, Ireland.

Lord Aberdeen offers a premium of £500 for the best design submitted. The deposit of £1 is apparently not returned to competitors, but goes towards covering the cost of the necessary plans which are sent to each competitor, and some of which we hope to give in a future issue.

For the purpose of the present competition the area may be described as "Greater Dublin," and considered as not only including the adjacent townships of Pembroke and Rathmines, but as ranging from Howth to Kingstown and Dalkey inclusive, and from Glasnevin and Ashtown to Dundrum.

MAIN HEADINGS.

Schemes shall be treated as far as possible under the following main headings:—

a. Communications.
b. Housing, Central and Suburban.
c. Metropolitan Improvements.

With regard to these the following matters should be considered:—

A.—Communications.

1. *Road, Railway, and Canal Systems* should be considered in relation to the economical working and possible developments of (*a*) general, Irish, and over-sea traffic, (*b*) of the industrial and other requirements of the city and its immediately surrounding region.

2. *The Location of Existing Industries* should be discussed, with suggested provision for future developments and better localisation, if possible. The grouping of small workshops, the supply of garage accommodation, etc., for various quarters, should be considered.

3. *Main Thoroughfares and Streets, Existing or Proposed.*—Discussion of traffic—motor, cartage, tramways, etc., with modifications and extensions desirable both as regards Greater Dublin and its central area, provision for the growth and extension of industrial, shopping, residential, and other areas.

B.—Housing.

1. *Existing Tenements.*—These are described in the accompanying Report of the recent Local Government Board Inquiry under three headings, A, B, C. Suggestions are desired for their respective treatment; with sketch plans and estimates.

2. *Dwellings Required.*—These are estimated in the above mentioned Report at 14,000. Housing to this extent (including possible utilisation of existing tenements) should therefore be comprehensively dealt with. Sketch plans and estimates should be furnished for the various types of dwellings recommended with block plans suitable to given aspects, and showing proposed distribution of them in town quarters and in suburbs.

3. *Density of Housing.*—In the rebuilt town quarters this should not exceed 100 persons per acre, and in the suburbs sixty persons per acre.

4. *Period of Execution.*—A scheme should be outlined for gradual execution of the housing scheme within a period of, say, ten years, and with approximate estimates of expenditure for each stage.

Attention should be given towards minimising inconvenience to the population concerned, and in particular towards the risks of local increase of congestion and rise of rentals, which might be caused by demolition outrunning construction in any district.

Possible Sites.—These are broadly indicated, for city areas and for suburbs, in the map accompanying Evidence of Local Government Board Inquiry.

Open Spaces, Playgrounds, Gardens, etc.—Attention should be paid to the provision of these in every quarter treated, and upon as full a scale as may be compatible with local circumstances. It may be mentioned that the standards now being taken as normal by American cities are that of reserving 1 acre for every ten of the total city area, or of allowing 1 acre of recreative space per 200 of population. These standards are also being adopted in town-planning schemes in England.

Consideration may be given to the possible removal, in future years, to the suburbs or the country, of institutions of various kinds whose buildings and grounds, originally suburban, are now less favourably situated for their purposes and at present occupy a large aggregate acreage within the city. Suggestions towards facilitating the return of such institutions to suburban or rural conditions by the remunerative replanning of their present sites, for housing and other purposes, may therefore be submitted.

C.—Metropolitan Improvements.

1. *Controlling General Features.*—Attention should be paid to the main existing features of the city and to the possible fuller utilisation of the advantages of its situation. Primarily the Liffey, with its quays, bridges, and approaches, gives opportunities for improvement; as also do the courses of the minor rivers and of the canals. The sea front should be considered and the views and accesses towards hills and mountains kept in mind.

2. *Public Buildings and Associated Planning.*—Suggestions may be made towards the provision of space for extensions when required of existing public buildings and institutions, national, municipal, educational, etc., particularly where improvement of the existing planning is suggested.

Sites may also be indicated, with appropriate planning for the surroundings, for any or all of the following:—

Additional Government and Administrative buildings as required, Catholic Cathedral, Modern Art Gallery, Opera House or National Theatre, Music Auditorium, etc.

Antiquities must be preserved, and characteristic buildings of different periods should be retained as far as possible.

3. *Parks and Gardens, Parkways, Boulevards, etc.*—Suggestions are desired towards the improvement and better access and utilisation of the existing parks and gardens and towards future extensions and connections as a park system with parkways and boulevards.

COMMUNICATIONS AND METROPOLITAN IMPROVEMENTS.

Outline map, showing—

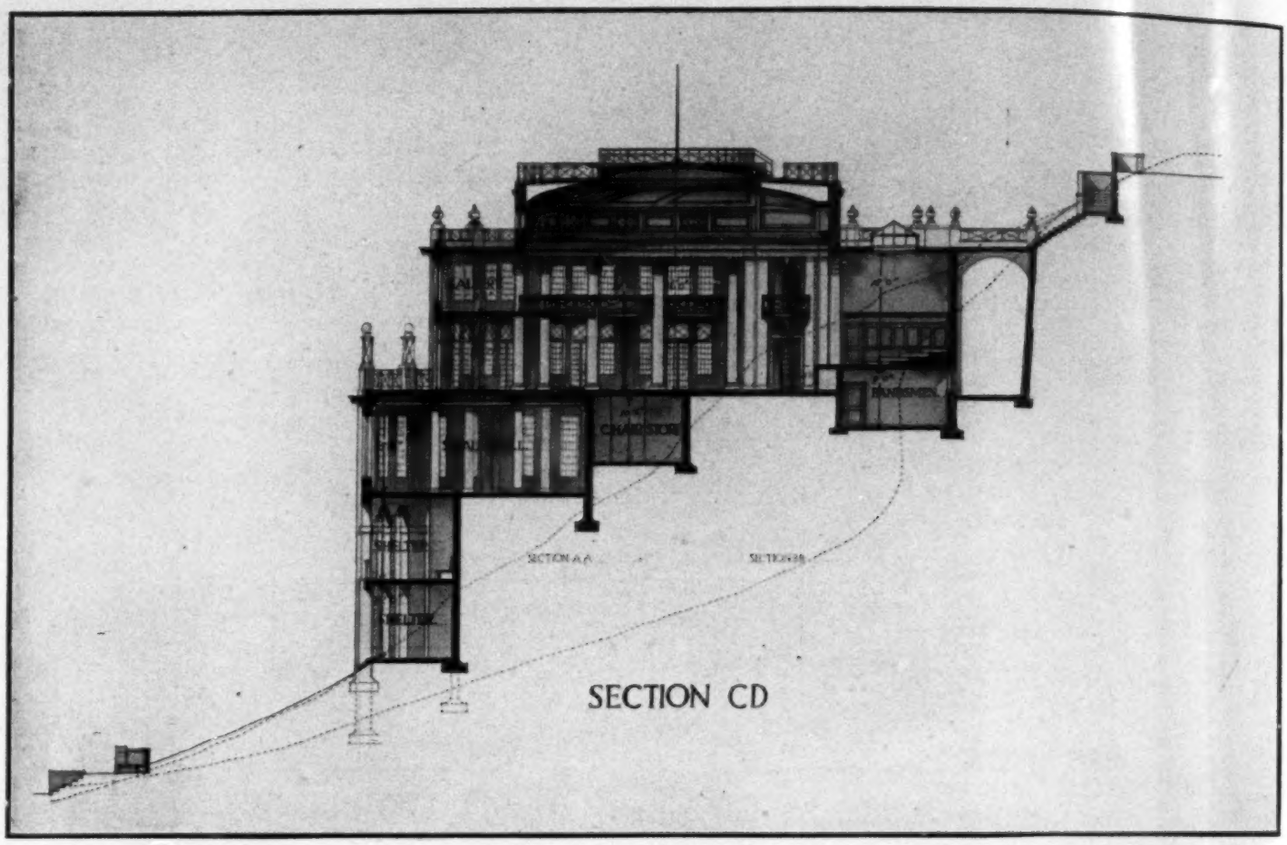
1. Railways and tramways (with present penny fares limit).
2. Canals, rivers, and docks (with depth and tidal limits).
3. Main thoroughfares and industrial centres, with some notes on traffic and congestion.
4. Public buildings and leading centres of resort. Industrial, transport, office, shopping, and residential quarters.
5. Parks, gardens, open spaces, and large unbuilt areas.

New Schools, Hendon.

At a recent meeting of the Hendon Education Committee a letter was submitted from the Hon. Secretary of the Competitions Committee of the Royal Institute of British Architects with reference to the Hale Grove-gardens School, in which he stated that he regrets to see that no assessor has been or is proposed to be appointed in connection with the competition, and adding that unless a duly-qualified assessor is appointed members of the Institute and allied societies will be unable to compete. The Education Secretary was directed to reply that the Committee decline to appoint an assessor.

New Board of Trade Offices.

In further reference to the competition for the new Board of Trade Offices, we should like to explain that in the list of names which we gave in our last issue it should have been mentioned that Mr. Alec Hornell and Mr. Annesley H. Brownrigg are associated in the design they have sent in in this competition.



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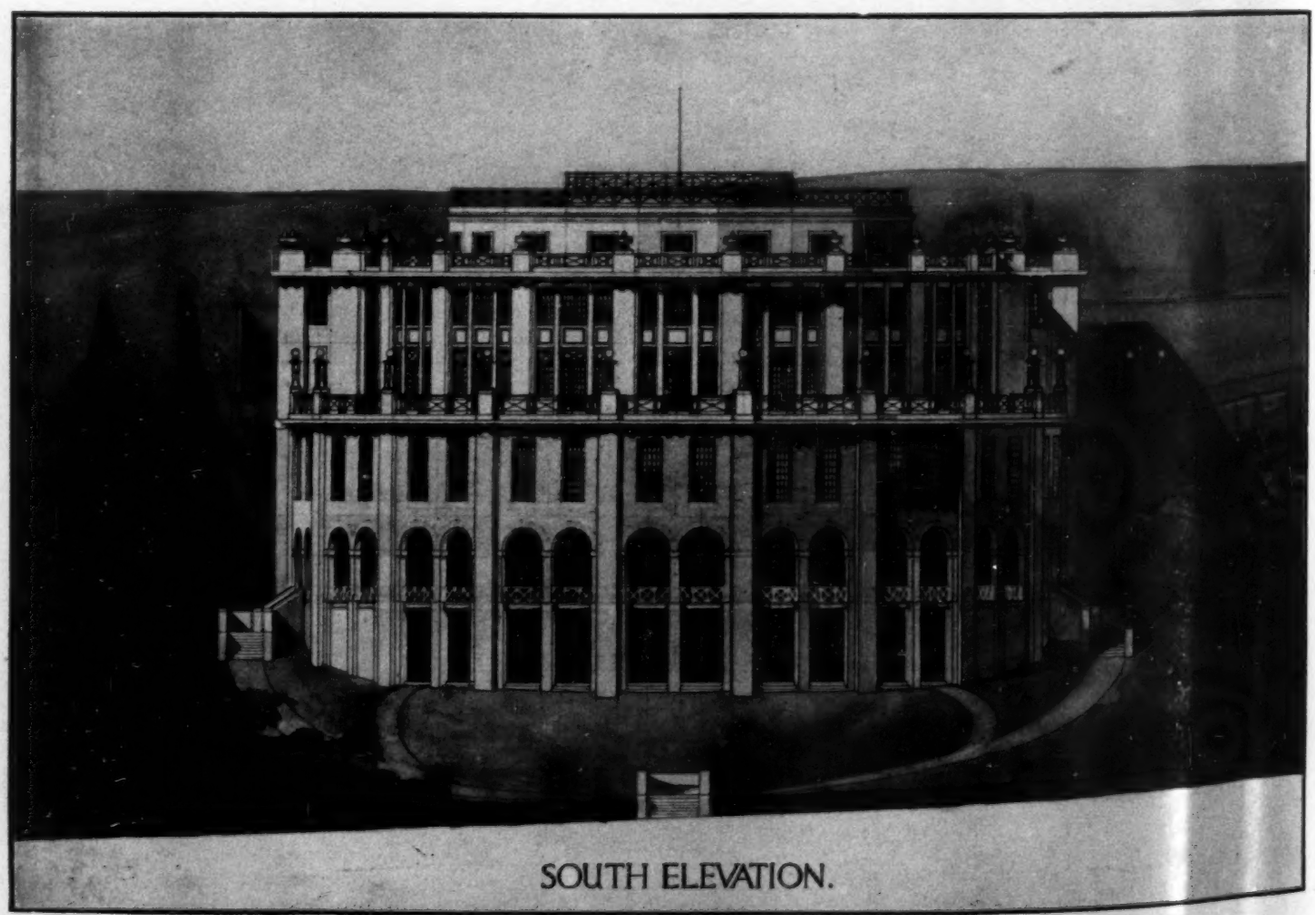
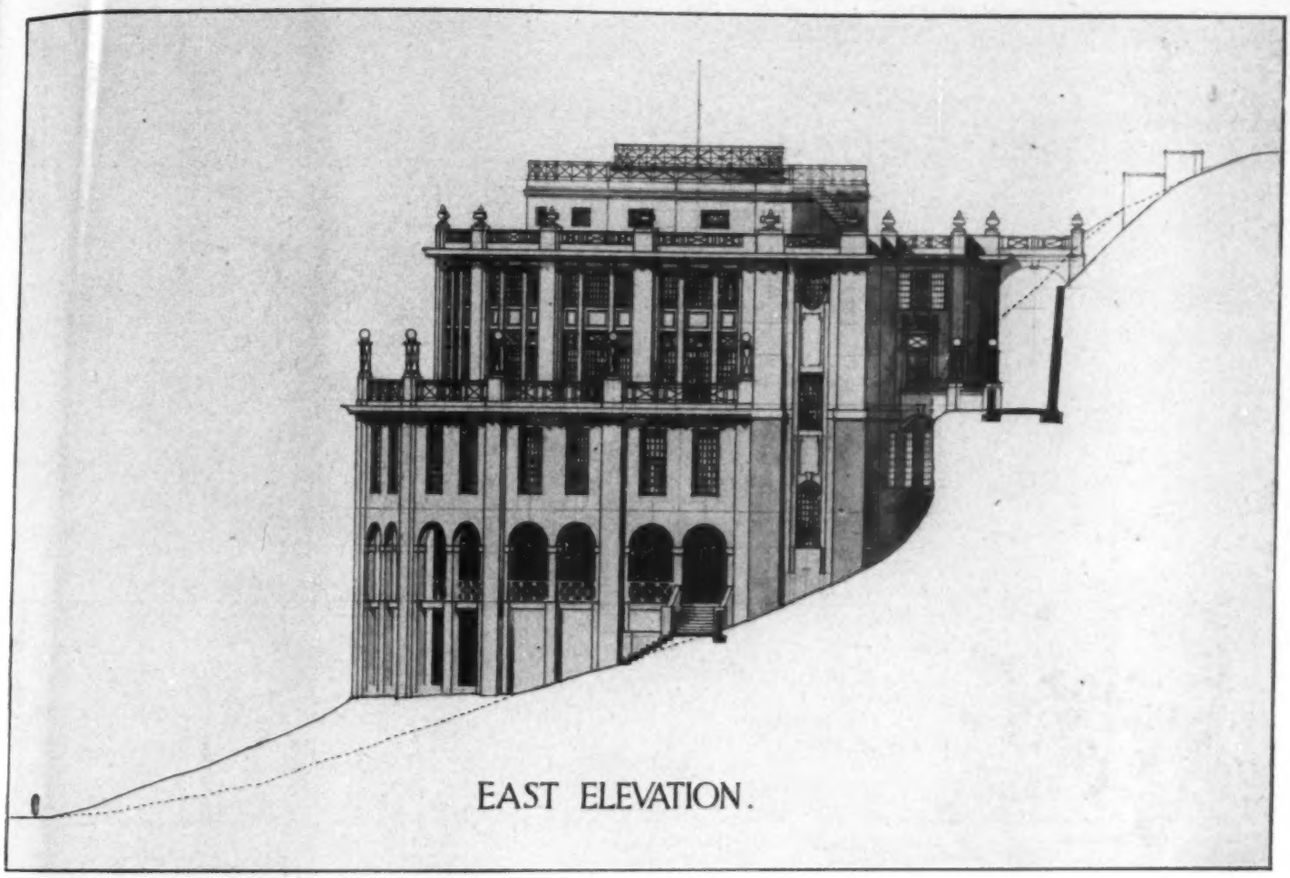
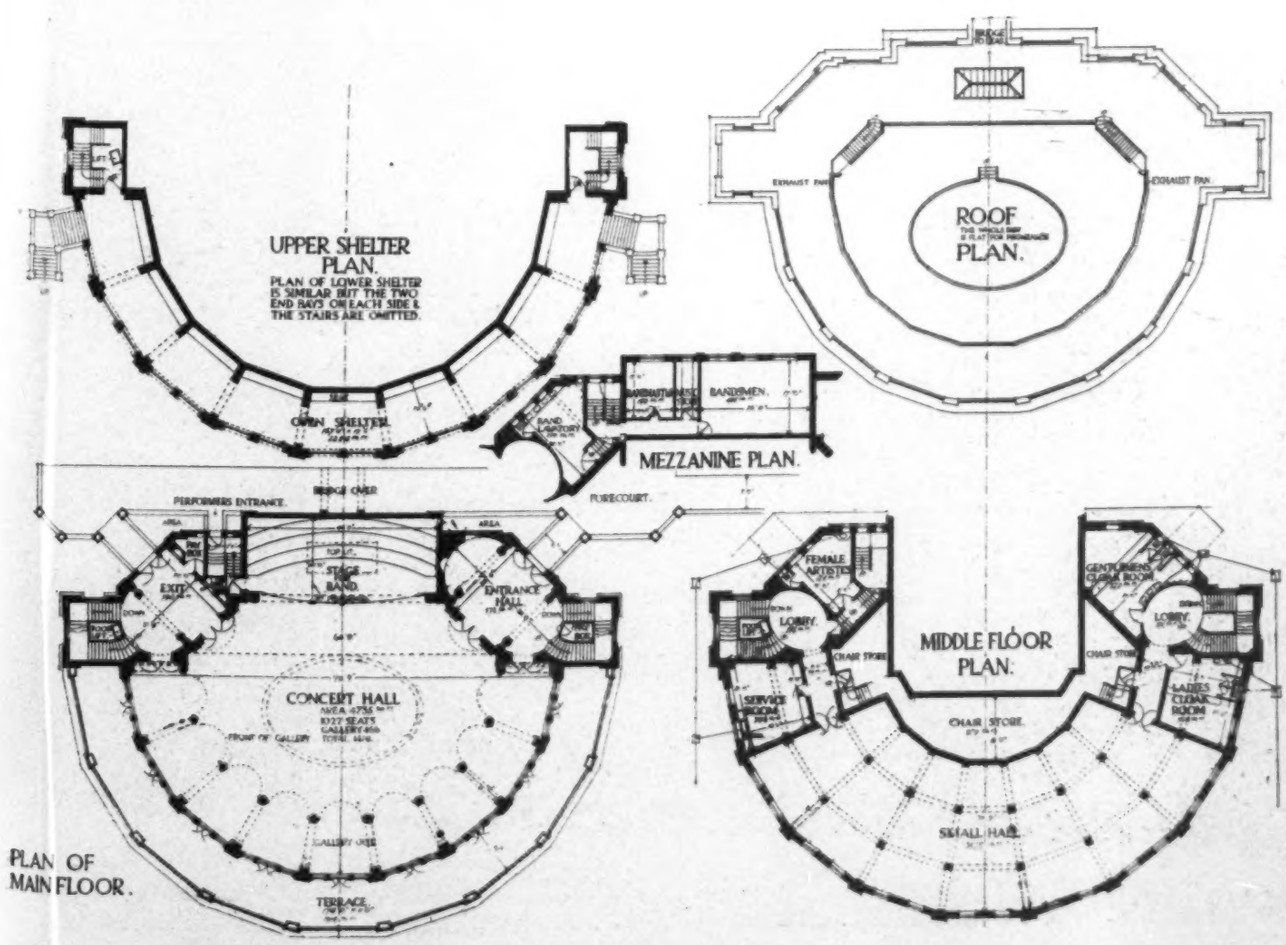


SOUTH ELEVATION.

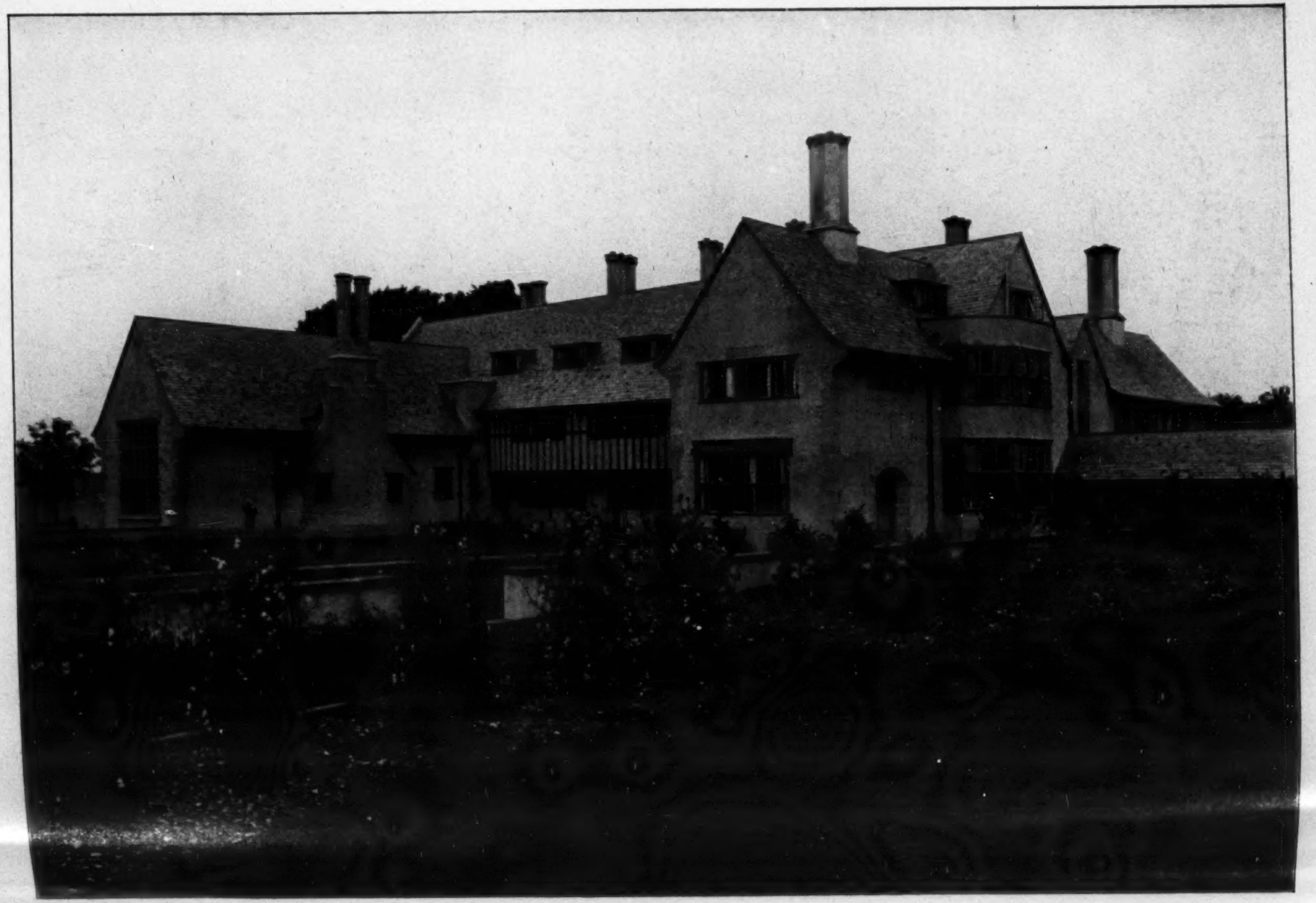
BAND PAVILION, FOLKESTONE.—First Premiated Design, by Messrs. W. J. Palmer Jones & Grant.



EAST ELEVATION.



BAND PAVILION, FOLKESTONE.—First Premiated Design, by Messrs. W. J. Palmer Jones & Grant.



Martin, Hood & Larkin, 61. Newport St., London, W.C.

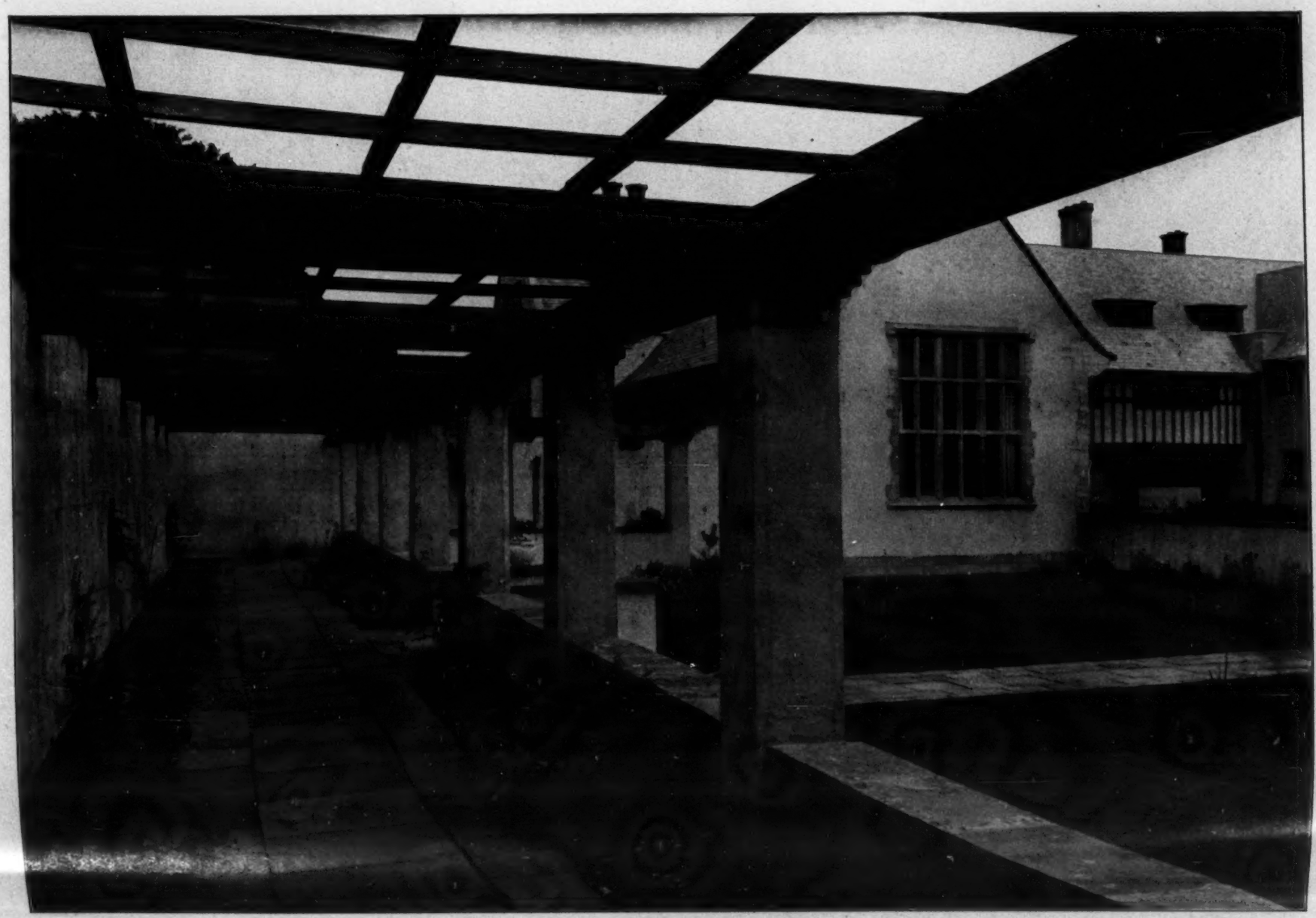
EWELME PARK, OXON: VIEW OF HOUSE FROM S.E.—Mr. L. Stanley Crosbie, F.R.I.B.A., Architect.

Martin, Hood & Larkin, Gt. Newport St., London, W.C.

EWELME PARK, OXON: VIEW OF HOUSE FROM S.E.—Mr. L. Stanley Crosbie, F.R.I.B.A., Architect.

Martin, Hood & Larkin, Gt. Newport St., London, W.C

EWELME PARK, OXON: ENTRANCE COURT.—Mr. L. Stanley Crosbie, F.R.I.B.A., Architect.



Martin, Hood & Larkin, 61, Newport St., London, W.C.

EWELME PARK, OXON.: VIEW THROUGH PERGOLA.—Mr. L. Stanley Crosbie, F.R.I.B.A., Architect.

Martin, Hood & Larkin, Gt. Newport St., London, W.C.

EWELME PARK, OXON: VIEW THROUGH PERGOLA.—Mr. L. Stanley Crosbie, F.R.I.B.A., Architect.

Martin, Hood and Larkin, Gt. Newport St., London, W.C

EWELME PARK, OXON: THE GALLERY.—Mr. L. Stanley Crosbie, F.R.I.B.A., Architect.

LIFE OFFICE ENTRANCE.

FIRE AND ACCIDENT OFFICES.

NORWICH UNION BUILDINGS, FLEET-STREET, E.C.—MESSRS. HOWELL & BROOKS, ARCHITECTS.

CONSTRUCTION SECTION.

THE NEW OFFICES FOR THE BOARD OF AGRICULTURE.

OWING to the great increase in the work of the Board of Agriculture and Fisheries, and the difficulty of efficient organisation and control with the various departments scattered about in different buildings in the West-end, it became necessary to provide new premises for the accommodation of the whole Department. These premises are now being completed in Whitehall-place, and the site, which adjoins the Hôtel Métropole, has frontages of 136 ft. to Great Scotland-yard, 101 ft. to Whitehall-place West, and 150 ft. to Whitehall-place. The new building is being erected under the superintendence of Mr. H. A. Collins, A.R.I.B.A., one of the architects of H.M. Office of Works, the designs having been originally prepared by the late Mr. H. V. Hawkes, I.S.O. The accommodation required is somewhat extensive, as the work of the Board has been considerably increased during recent years owing to the many additional duties that have been imposed upon it since its establishment in 1889. The Ordnance Survey Department, which has its headquarters at Southampton, comes under the Board, and the same applies to the Royal Botanic Gardens, Kew, and the fisheries of England and Wales. Accommodation has to be provided for a President, a Permanent Secretary, a Parliamentary Secretary, Assistant Secretaries, and a staff of administration and technical officials.

The new building has seven floors above the pavement and two below, giving a total height of about 110 ft., the two top floors being placed in the roof. The basement floor level is 15 ft. below the pavement level, and a corner of this floor is cut off by the Regent-street sewer, which passes under the building at the level shown on the section illustrated in Fig. 1. Although the whole of the construction has not been executed in reinforced concrete, this material has been largely employed for the important weight-carrying members, and this part of the work has been designed according to the Hennebique system by Messrs. Mouchel & Partners, Ltd., of Victoria-street. The ground-floor plan is illustrated in Fig. 3, and this shows the general lay-out of the building, where it will be seen that the principal entrance is situated in the centre of the Whitehall-place front, and this leads directly to the main staircase and lift, which are placed in the centre of the building. The interior of the building is lighted by two large areas with sky-lights over the basement floor, and the main staircase comes against one of these area walls, and is thus directly lighted and ventilated, while the arrangement of the internal partitions for subdivision of the floor into the various rooms is indicated, and this may be taken as typical for all the upper floors. The basement, which is to be used for stores, workshops, and packing, is served by a hydraulic lift in the north-west corner from Scotland-yard, and the lower ground floor, although practically below the pavement level, has the ceiling sufficiently above the latter to enable windows to be formed for lighting in all three façades. In addition to the main passenger lift, which is electrically driven, and the goods lift above referred to, provision has been made for electric book lifts, a hand-power lift for maps, and a lift for service to the kitchen quarters. The three façades are constructed of brickwork faced with Portland stone, and all the internal division walls in which fireplaces are formed are constructed of brickwork. The retaining walls are built of blue bricks, and blue-brick piers are built at all points where concentrated weights have to be carried by any of the division or main walls, while reinforced concrete has been employed for the columns, beams, floors, roofs, and staircases. Before commencing building operations trial holes were made to ascertain the value of the soil for supporting purposes, and these disclosed various layers of made ground, old brickwork and concrete, mud, sand, and clay to depths varying from 20 ft. to 25 ft. below the pavement level, and underneath this a layer of gravel was encountered. The latter was found to vary from 12 ft. to 20 ft. in thickness and was overlying the blue clay, while water was encountered at a depth of about 27 ft. from the surface. It was decided to put in a concrete raft over the whole surface, and this was formed in two thicknesses, the lower layer being 6 in. thick and the upper layer 1 ft. 6 in., a continuous asphalt damp-course being put in between the two layers and taken through the surrounding walls and carried up on the outside of the building to form what practically constitutes a huge asphalt tank, in which the building stands. The retaining wall and the

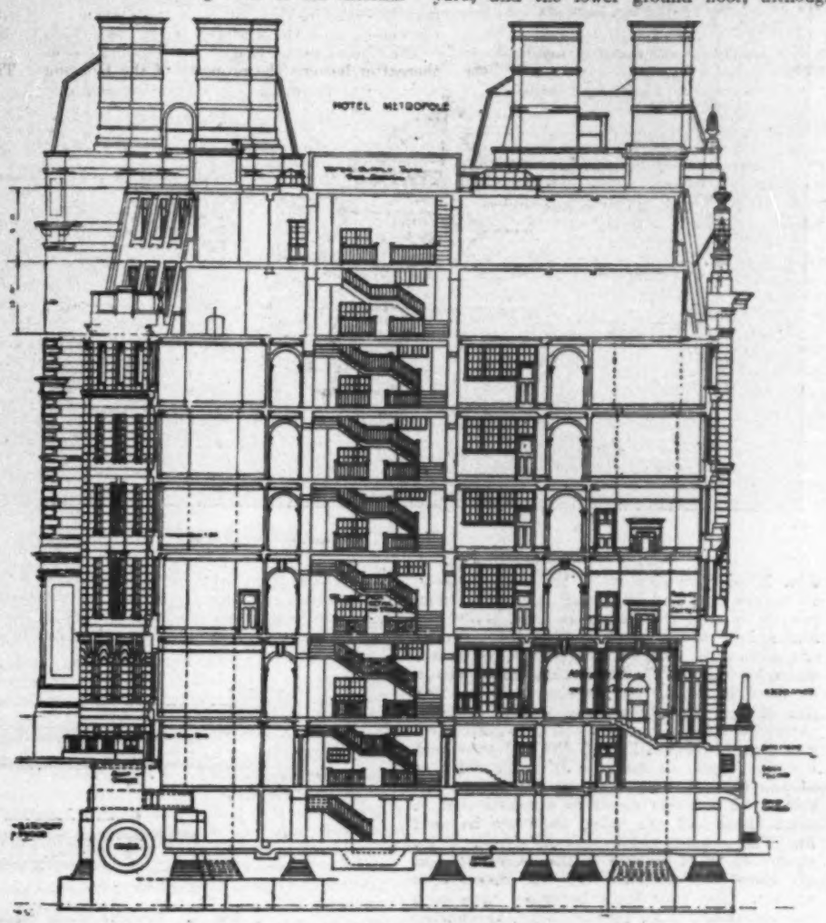


Fig. 1. Cross-Section.

Fig. 2. Elevation to Whitehall-Place.

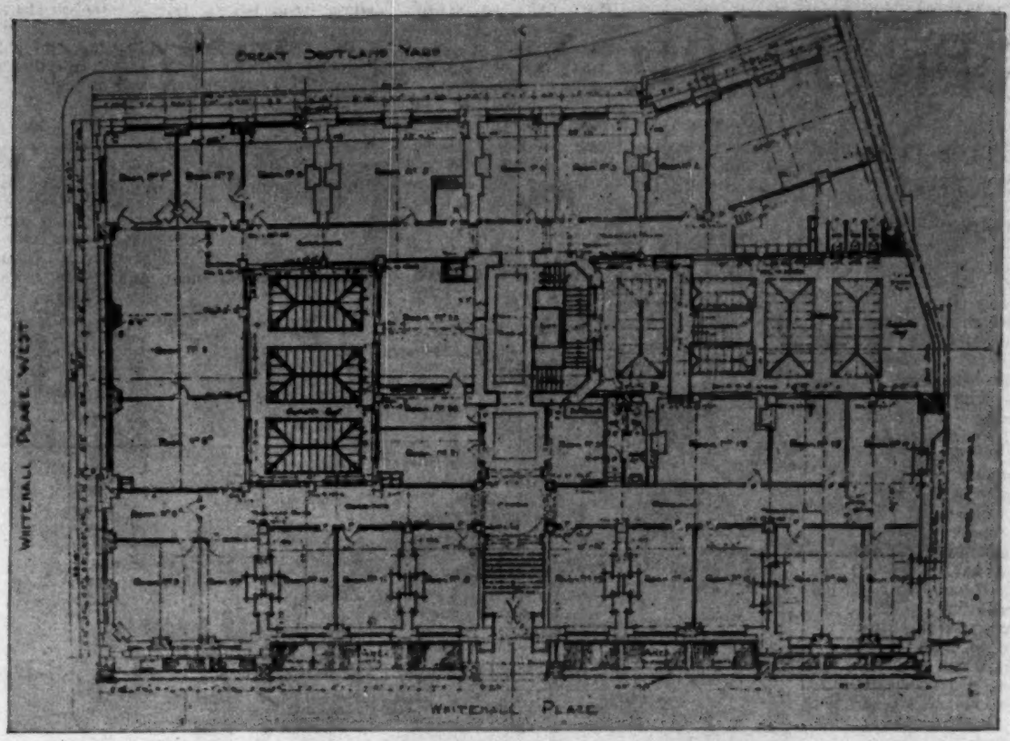


Fig. 3. Ground-Floor Plan.

9-in. interior division walls are built directly on to the raft, and the latter is covered with paving to form the basement floor, while the foundations of the main walls and columns are taken right through the raft and continued down to the gravel soil, a distance of about 11 ft. 6 in. below the basement level. The size of the foundation slabs to the columns varies from 30 in. square to 54 in. square, and the general disposition of the columns and beam as shown on the plan (Fig. 4), which is of the lower ground construction, where the reinforced concrete members are indicated in solid black and the brick walls are hatched in. The columns themselves vary from 18 in. square to 28 in. square in the basement, and all these are designed on the Hennebique system. The floor loads generally have been calculated at 112 lb. per foot super. in addition to the dead load of the floor itself, but in some cases this amount had to be increased owing to the intended use of the rooms, and in such cases the floors were each designed to carry the exceptional loads according to the special requirements. The roofs, where flat, are calculated to support an external load of 50 lb. per sq. ft. The floor slabs vary from 5 in. to 6 in. in thickness, and these are carried by secondary and main beams, and except in the case of very small panels are reinforced in both directions and in both surfaces. The sizes of the beams varied considerably owing to the absence of symmetrical planning, but, generally speaking, the secondary beams were constructed with a rib 6 in. wide and an average depth of about 15 in., with two main reinforcing bars in the lower surface, one of which was cranked up at the ends and continued over the main beams into the adjoining bays. All secondary beams abutting on the main beams wherever possible have brackets 12 in. long and 2 in. deep, and stirrups are provided throughout the length, these being passed round the main reinforcement and carried nearly up to the surface of the slab at the top. The main beams also varied in size, but a typical section has a total depth of 19 in. and a rib with a width of 11 in., while the tensional reinforcement consisted of six or nine rods with stirrups at varying intervals throughout the length. Typical details of secondary and main beams are illustrated in Fig. 5, and it will be seen that brackets were formed at the junction of beams and columns, these generally being 10 in. deep and 1 ft. 6 in. long. Some typical details of column and beam connections are also illustrated in Fig. 7, where it will be seen that the beam rods are in all cases carried well into the columns and adjoining work, and securely anchored to assist the adhesion. The detail in Fig. 6 shows a column with a beam coming upon it from either side, and it will be noticed that bars are provided in the upper surface which give continuity of construction, and the whole of the work is well tied together. In many cases reinforced concrete templates were placed under the beams resting on the walls, and these were 6 in. thick and about 15 in. by 9 in. on plan, with five rods on the lower surface as reinforcement. In some cases the thickness was increased to 9 in. where the templates were required to give a larger distributing area, and in these instances rods were provided in both upper and lower surfaces. The roof-work contains some interesting details, as all the sloping portions are formed in reinforced concrete and a number of openings were required for the dormer windows, the cheeks and tops of the latter being also formed in the same material. The slabs forming the actual slopes are constructed with 3½ in. of concrete reinforced with rods in both directions, and where the openings occur these rods are bent round trimming bars, which are continued for the full length of the slope and the full width of the slabs between the main sloping beams. These main beams are 15 in. deep and 8 in. wide, and they have a length of about 25 ft., being continuous for the full height of two floors with the intermediate floor beams running into them. They are reinforced with two rods in each surface and partake more of the nature of raking struts than beams, as they are formed with links at regular intervals, which bind the whole of the rods together. The thrust from these raking beams at the foot is taken by the main floor beams below, and in some cases the depth of the latter is increased where it forms the abutment and additional reinforcement is provided. The actual detail of the work is naturally varied considerably throughout to suit the circumstances at each

Fig. 5. Typical Main Beam and Typical Secondary Beam.

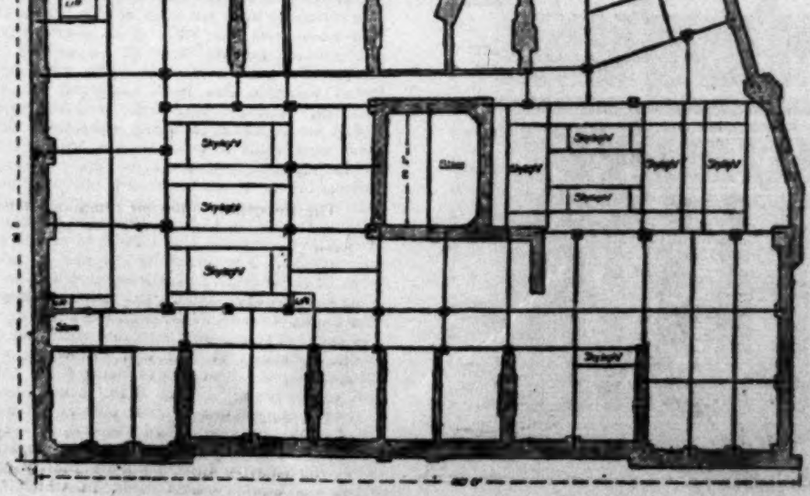


Fig. 4. Plan showing Arrangement of Beams.

particular point. The flat roof slabs are 4 in. thick, and these are generally reinforced in both directions. The staircases and landings are constructed in reinforced concrete and a

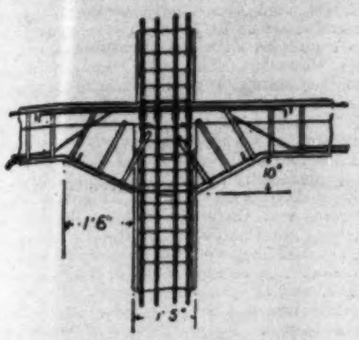


Fig. 6. Connection of Beams and Columns.

typical detail of this work is illustrated in Fig. 8, where it will be seen that one cross rod is placed under each step and anchored to the mass of the concrete with stirrups, and continuous rods are placed above these parallel to the soffite of the flight. The whole of the concrete throughout was machine mixed, and two electric hoists were installed for raising the mixed concrete to the different levels. The bays between the piers around the interior areas are filled in with 9-in. brickwork faced with white-glazed bricks, the window quoins being of buff-glazed bricks. The reinforced concrete columns and beams which occur in these walls are covered with 9-in. by 3-in. glazed tiles to correspond with the brickwork adjoining, and the window arches are covered with specially-made glazed tiles which have the face and soffite in one piece, and these are attached to the reinforced concrete beams at the heads of the openings. The internal partitions generally, that are not built in ordinary brickwork, are constructed with Hemel Hempstead fireclay partition blocks. The entrance hall and the landings on the ground and first floors are paved in terrazzo with marble borders, and the walls up to the second-floor level are lined with Siberian-green marble with darker green margins. The treads and risers of the main staircase from the lower ground floor to the second floor are in Hopton Wood stone. The building is fitted up and generally equipped with every modern appliance necessary for the efficient working of a business department, and the application of reinforced concrete in the important constructional members ensures the maximum fire resistance and affords another example of the use of the material in Government building work, where sound construction is combined with a considerable saving in the initial cost owing to the extensive use of this material. The foundations were constructed under a separate contract by Messrs. Holloway Bros. (London), Ltd., of Belvedere-road, S.W., and the work to the superstructure was executed by Messrs. Higgs & Hill, Ltd., of South Lambeth-road, S.W. The aggregate and sand for the concrete were supplied by the Ham River Grit Company, of Ham and Wouldham, and the steel for the reinforcement by the Whitehead Iron and Steel Company, Ltd., of Tredegar. The concrete-mixer was a Ransome pattern electrically-driven mixer, and the cement was supplied by the British Portland Cement Company, Ltd.

CALCULATIONS AND DETAILS FOR STEEL-FRAME BUILDINGS FROM THE DRAUGHTSMAN'S STANDPOINT.*

THE working of the London Building Acts 1909 Amendment has during the last three years or so been more or less in what might be termed the experimental stage. Most constructional firms have had their experiences of the Act's working and limitations, and though, as might have been expected, everything may not have been smooth at first, yet I think that ultimate successful working is already assured by the fact that the modern tendency is to adopt the provisions and requirements of the Act to the design and construction of the steelwork for buildings that are not necessarily subject to the requirements of the Act. This is certainly a step in the right direction, and it is to be hoped that this tendency will continue, and the design of all-steel structures become more uniform and tend towards the standardisation of details.

Another aspect which should not be lost sight of is the status of the engineer in the future. The 1909 Amendment is essentially an engineer's Act, and the Reinforced Concrete Regulations will be more so, therefore it seems within the possibilities of the near future that, provided the engineer takes advantage of his opportunities, he might assume the more important position, and in such a case the architect would confine his attention solely to the architectural treatment, unless, of course, the architect more fully appreciates the rapid change in modern building conditions and construction.

The calculations and details required to be made for the purposes of the construction of a modern steel-frame building is a much more extended process under the 1909 Act than has been required hitherto.

It is only of late years that special calculations have been considered necessary for taking into account the presumed effects of eccentric loading on pillars; in fact, these latter calculations would have been considered in the past as being in the highest degree pedantic.

It is an open question as to whether we are becoming in these days less practical and more theoretical in the methods of considering what have been termed "fine points."

Certainly it is some relief not to be required to make a similar allowance for the eccentric loading upon beams, but no doubt when a future London Building Act is formulated a suitable treatment (from the theoretical point of view) will have been devised, and the calculation of such beam eccentricity will be one of its outstanding features.

In the past it was the practice to consider the loading on a floor as inclusive; that is, the load per square foot upon which the calculations were based was assumed to include the weight of construction; now, however, it is becoming the practice to ascertain individually the superloads, dead weights of floors, beams, pillars, beam and pillar-casings, etc. This is certainly a distinct improvement and tends towards greater accuracy and economy in design.

It was not usual to make any reduction of the superloads on floors in calculating the loads to be carried by pillars and piers; this concession may appear to some to be but the sugar on the pill of eccentric loading. Again, engineers and draughtsmen did not give much attention to the conditions of pillar and fixing; it was not indeed considered a very vital point.

Let us now consider the question of the arm of eccentricity. Some engineers hold the opinion that the eccentric load on a pillar acts at the centre of area of the seating through which the load is transmitted, that is at point A on Fig. 1. Again, it is the opinion of others that the eccentric load can be assumed as acting in the plane of the external face of the seating, that is at point B on Fig. 1. Yet again, other engineers assume that the eccentric load acts in the plane of connection of the seating to the pillar, point C on Fig. 1. It would be extremely interesting if a ballot were taken of the opinions

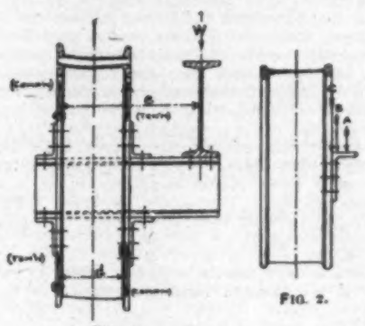


FIG. 1. FIG. 2.

The Arm of Eccentricity.

of the members of this Institute upon this apparently movable point.

Another difficult point regarding which the draughtsman must exercise his knowledge and experience is the question of "end fixing" to pillars. What constitutes a fixed end? What can be termed a hinged end? Also what relation does a flat end bear to either or both of the above?

These questions are very irritating to the conscientious draughtsman, because, no matter with whom he may discuss the question, the end fixing seems to depend not upon ascertained facts from experiments, but chiefly upon personal opinion. Nevertheless, the opinion is generally held that the topmost connection of a pillar in the topmost story and the lower connection of a pillar in the bottom story shall be considered as hinged ends, though the latter connection or base of the pillar could reasonably be considered as a "flat" end.

Also it seems reasonable to assume that the pillars in external walls which only receive two or three way connections shall be considered as having one end hinged and the other fixed.

The important question remains, When can a pillar be assumed to possess both ends fixed?

My personal opinion is that in a case where a pillar is continuous both above and below the connection at two consecutive floors, and receives at both floor connections or "ends" a four-way connection in which the heavier or deeper beams are connected to the pillar perpendicular to its weaker axis, such a pillar shall be considered as having both ends fixed.

The calculations for a steel-frame building should be prepared once and once only, and they should be sufficient in detail for submission to the District Surveyor for his approval, also for the complete working drawings to be made therefrom without any addition or alteration.

* Part of a paper by Mr. W. Cyril Cocking, read before the Concrete Institute recently.

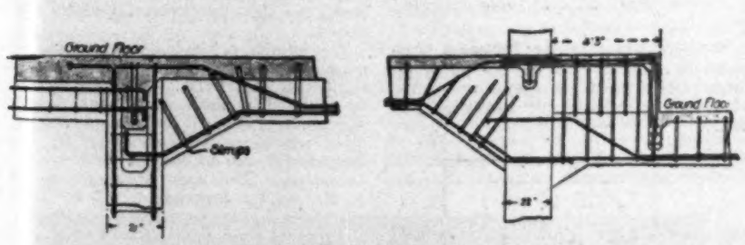


Fig. 7. Details of Connections.

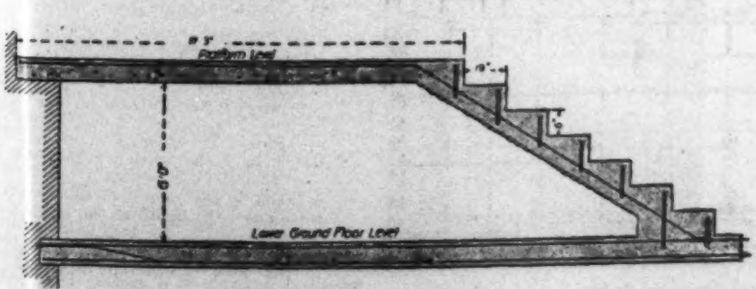


Fig. 8. Staircase Construction.

If the structure is one in which there are several floors of similar construction and loading, the calculation forms proposed by the District Surveyors' Association are eminently suitable, but if the structure is somewhat complicated by reason of the various floors being designed for different purposes it will be sometimes more convenient to propose other forms, according to the requirements of the District Surveyor or the custom of the draughtsman.

When making calculations a number of approximations can be made for the purpose of saving labour and time. The following formulæ should be found of some assistance :—

Approximations.

1. Section modulus for I sections as beams. It will be found that if—

W_s = weight of I section in pounds per foot-run,
d = depth over flanges of section in inches,

approximately $M = \frac{W_s d}{10}$.

2. The safe load on 1-ft. span for I sections as beams, stressed from 7½ to 8 tons per square inch, is approximately equal to $\frac{W_s d}{2}$.

3. The area of a bar of steel in square inches whose weight in pounds per foot-run = W_s is approximately equal to $A_s = \frac{3W_s}{10}$.

This latter approximation gives an error of 2 per cent.

4. The safe load in tons for I sections as pillars, both ends considered fixed, is approximately equal to the weight per foot-run in pounds upon a laterally unsupported length in feet equal to twice the width of flange in inches.

5. For the stress of 7½ tons per square inch allowed under the Act, the section modulus M is exactly equal to 1·6 times the bending moment in foot-tons. And for beams supporting a uniformly distributed load w tons per foot-run, then $M = 0{\cdot}2wL^2$, where L is the span of beam in feet.

6. For determining the approximate total weight of a beam the following formula may be used when the cross-section is unknown but the depth is assumed, $W_B = \frac{8BL}{1000d}$ or $\frac{WL^2}{1000d}$, where—

W_B = approximate weight of beam in tons,
B = maximum bending moment in foot-tons,
d = depth of beam in inches,
L = span of beam in feet,
W = total uniform weight or load or equivalent uniformly distributed load in tons.

7. The weight of a pillar can be approximated from the following formula, $W_p = \frac{WL}{C}$, where—

W_p = approximate weight of pillar in tons,
W = central load, or equivalent central load, on pillar in tons,
L = laterally unsupported length of pillar in feet,
C = a constant. 2,500 for both ends fixed and 2,000 for one end fixed and other hinged.

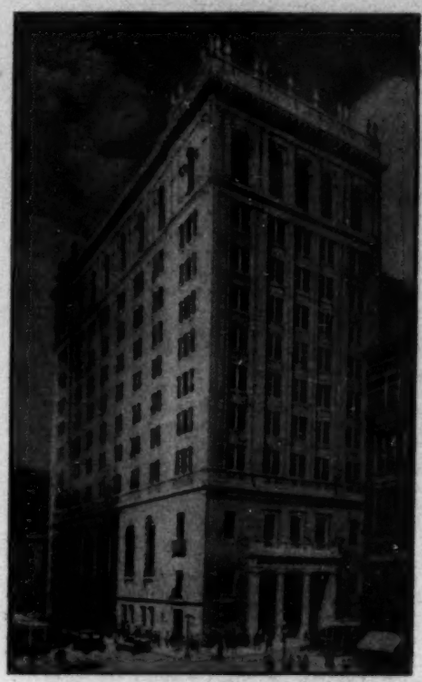
8. The weight of a beam casing is approximately equal to $W_c = 0{\cdot}00035bdL$, where—

W_c = approximate weight of beam casing in tons,
b = breadth of beam casing in inches,
d = depth of beam casing below ceiling in inches,
L = span of beam in feet.

9. The weight of a pillar casing can be calculated by the same formula as for beams, where—

W_c = approximate weight of pillar casing in tons,
b and d = breadth and depth of pillar casing in inches,
L = laterally unsupported length of pillar in feet.

10. For calculating the effects of eccentric loading due to the application of the usual



Dominion Bank Building, Toronto.
Messrs. Darling & Pearson, Architects.

formula the following approximate factors can be used to considerable advantage. The eccentric loads considered to be acting on the face of web or flange of section in each case.

For I sections, web connection—
Equivalent central load = 1½ times eccentric load.

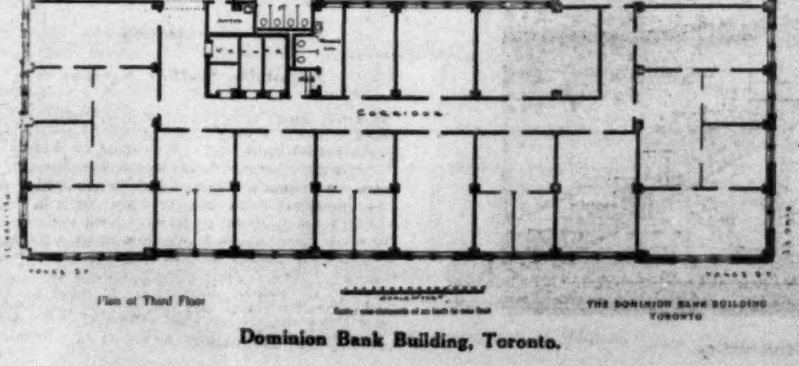
For I sections, flange connection—
Equivalent central load = 2½ times eccentric load.

For $\overline{\text{I}}$ sections, web connection—
Equivalent central load = 1½ times eccentric load.

For $\overline{\text{I}}$ sections, flange connection—
Equivalent central load = 2½ times eccentric load.

For $\overline{\text{II}}$ sections, where centres of webs of I beams is equal to one-half the width of flange plates; web connection—
Equivalent central load = 2½ times eccentric load.

For $\overline{\text{II}}$ sections, where centres of webs of I beams is equal to one-half the width of flange plates; flange connection—
Equivalent central load = 2½ times eccentric load.



Dominion Bank Building, Toronto.

THE NEW DOMINION BANK, TORONTO.

THE construction of this new building has afforded a notable example of modern rapid erection, and some particulars should be of general interest to those in this country who are concerned with the execution of works of this character. The site upon which the building stands, at the corner of Yonge and King streets, may be said to be in the centre of Toronto's commercial district, and the position is therefore eminently suitable for such a fine building intended for banking and other business. It has a frontage of 168 ft. to Yonge-street and 75 ft. to King and Melinda streets, and there are twelve floors in all, giving a total height of 186 ft.

The building, which has a sub-basement and basement, is of granite to a height of about 50 ft. and of terra-cotta above. The style of architecture is a free adaptation of the Italian Renaissance. The structure is of skeleton steel construction with tile arches and is done in fireproofing throughout. The sub-basement was excavated to a depth of 38 ft. below the street level, and solid rock was encountered at practically the position of the grillage beams. These beams were delivered in July as fast as excavation permitted, and the first columns were erected on August 19. Included in the sub-basement, mezzanine floor, and roof there are fourteen tiers of beams and girders supported by fifty-nine columns. Some idea of the dimensions of the building may be gathered from the fact that in the erection of the bank about 2,300 tons of steel were used. The steel for this structure was put together in just sixty-four working days, the final erection of the roof beams being completed on October 31 and the riveting and painting of the entire steel-work finished on November 10. This is an achievement of note. The steel contractors state that had it not been for occasional delays in transportation of material their portion of the work could have been completed in still less time.

Up to the top of the second or banking floor the steelwork was fabricated from stock at the Toronto plant of the steel contractors, while above the second floor it was of "Bethlehem" construction for the columns with "Carnegie" beams specially rolled for floors. For the work of erection two steel guyed derricks with 80-ft. masts and seventy-three booms swere utilised, the derricks being raised two floors at a time as the building progressed.

The granite Doric columns at the entrance are 3 ft. in diameter and 25 ft. in height. Extending to the mezzanine floor, the columns are an ornamental feature which will add greatly to the general attractiveness of the picturesque granite front.

The detail of the three façades of the building is simple, but at the same time very attractive. Architectural terra-cotta has been used in the entire exterior of the building above the granite-work, in all about 800 tons of the material having been utilised. The floor arches between the beams are of terra-cotta fireproofing construction, and the terra-cotta facing is a light grey colour, speckled and matt glazed.

The interior of the building promises to excel most other buildings in the city regarding equipment and finish. The ground floor will be occupied by the savings bank department. Immediately above it is the main banking-room floor, which will be approached by a monumental staircase of marble, fitted with bronze balustrade. The main banking-room, as well as the savings department, will be lined with marble from floor to ceiling.

From the second to the seventh inclusive the floors are divided for office accommodation, and will be subdivided to suit tenants.

On the eighth floor there will be dining-rooms and kitchen for the use of the banking staff.

The ninth floor will be the head office of the Dominion Bank. It is 22 ft. in height, lighted from the centre by ceiling light, and surrounded by a mezzanine floor.

The building is equipped with five electric passenger lifts and complete system of air-washed artificial ventilation.

The architects are Messrs. Darling & Pearson, and the general planning and arrangements are such that the building is worthy of study as an excellent example of a modern office building with every convenience.

THE CONCRETE INSTITUTE:
FORMS FOR CONCRETE WORK.*

We do not often hear of failures occurring in reinforced concrete buildings after their completion, but generally during their erection, and although all failures cannot be attributed to defective forms, yet these are to blame in a sufficient number of cases to render them an important element in securing efficiency in construction, and not merely in the utilitarian aspect. Although it is not the practice, in England at any rate, for engineers to design their forms, that being generally left to the contractor, it is the author's belief that an engineer, for his own protection, should at least set out some typical portion for the contractor's guidance, thus doing all he can to circumvent failure in this direction at any rate. Of course good forms alone will not ensure safety, and we have to use vigilance likewise in detecting bad work, bad design, and bad material. For, as Lieut.-Colonel Winn has pithily put it, "A fool with a shovel may absolutely defeat the most elaborate calculation involving the calculus."

Formwork is a term embracing all kinds of moulds or centering set up to give shape to the concrete or similar plastic material. It is so employed in America. There is a consensus of opinion in favour of the definition "formwork" as an inclusive term, owing to the real meaning of the term "centering" having a more limited application than usually attributed to it. As the word "form" is the same, and has the same meaning in French, German, Italian, and Spanish, the author believes it will be agreed we are on safe ground if we accept it for our purpose. The term has great merit, being superior to such terms as "falsework" or "shuttering."

The contention that the engineer should prepare the design of formwork has much to recommend it. An engineer will generally have no hesitation in setting out the design of centering for a bridge or other equally important work, but for some reason or other the design of ordinary formwork which plays such an important part in the cost of reinforced concrete is never considered. There is no doubt that a thorough understanding of the principles underlying the everyday practice of concrete form design is one worthy of the best engineering talent. With this understood, the problem can be analysed, the requirements realised, and the design decided upon that will be the most economical and efficient, giving due consideration to the salvage of materials.

It is not merely that a design is required for a specific case which will safely support a certain volume of concrete, it is rather the problem of designing a set of forms which can be erected, taken down, and many times reused during the progress of work. The factors involved are many, such as the type of centering, the kind of timber, how much to centre at one time, and what clamps, bolts, nails, wire, or strap steel should be used. These things properly considered will repay the trouble taken and result in better and more economical work.

Various authorities place the cost of formwork at anything from 20 per cent. to 60 per cent. of the total cost. The possibility of reducing this hindrance to the more general use of concrete ought to be sufficient inducement for us to give the matter close consideration. The great American constructional firms have struck out in many directions to reduce this cost to a minimum, and to this end the forms in most instances are designed in the drawing-office, and this, we are told, at a cost of 2 per cent. and a saving of 10 per cent.

The author then dealt with the kinds of timber that are used for formwork, the desirability of giving a camber to the bottom of beam boxes, the desirability of carefully checking the measurements, to see that the concrete members are actually carried out as designed, the necessity of having joints close to prevent the mixture escaping, the remedying of cracks, the removal of forms, clamps, and nails to hold the forms together, the repair and re-use of formwork, the number of sets required in order to get on fast enough with the work of building, the importance of carefully clearing forms of all sawdust, dirt, and chips before filling with concrete, the wetting of timber to prevent sticking, the use of sheet metal, the time for striking forms and methods of determining the strength.

* Summary of a paper by Mr. Alan Graham, A.R.I.B.A., M.C.I., read at the Forty-sixth Ordinary General Meeting of the Concrete Institute on Thursday, March 12.

UNITED STATES BUREAU OF ENGRAVING AND PRINTING.

The principal work conducted by the United States Bureau of Engraving and Printing is the production of paper-money and postage stamps. For some years past the old printing office building in Washington has been quite inadequate for the increasing demands upon the Department, and a spacious new building has recently been constructed, with a concrete protected steel frame and reinforced concrete floors, roofs, and other details, the outer walls being of granite and limestone.

The new building is 505 ft. long by 300 ft. deep, having five stories in addition to the basement, and the aggregate floor area amounts to about 11 acres.

The basement contains a series of five reinforced concrete strong-rooms for the storage of plates from which paper-money and stamps are printed. In order to provide adequate protection against fire and theft, the floors are several feet thick and the concrete is reinforced by specially hardened steel; the walls are about 2 ft. thick and similarly reinforced.

All the concrete was prepared and handled by duplicate plants, as illustrated in Fig. 2, in two of the courtyards. Each plant included a concrete-mixer, construction tower, hoist, and gravity distribution shoots. The method of operation was as follows:—Sand and gravel were delivered through a grating into the pit, A, lifted to the storage bin, B, by a conveyor, measured in the divided hopper, C, where cement was added, and the materials were then discharged into the concrete-mixer, D. The concrete was delivered from the mixer into the bucket, E, hoisted to the required height and automatically discharged into the receiving hopper, F, where a valve controlled the flow of concrete into the shoot, G, terminated by the distributing hopper, whence it was conveyed by secondary shoots, or by barrows, to the required points. The concrete was mixed with sufficient water to prevent it from clogging the shoots, which were lined with sheet metal. The construction towers were about 150 ft. high and guyed with wire ropes.

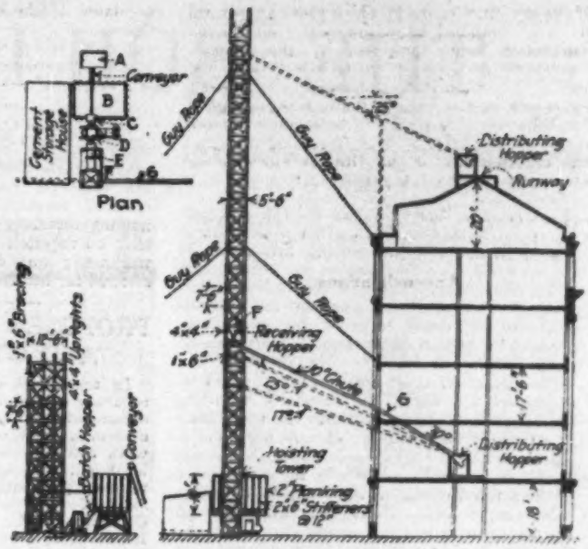
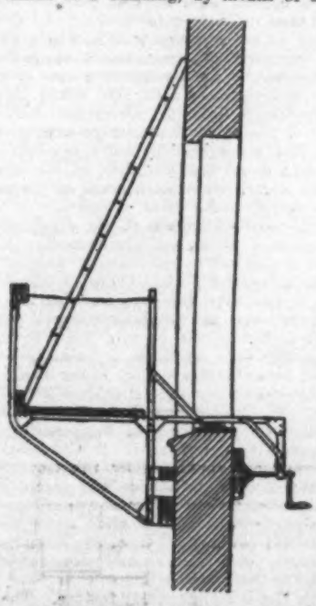


Fig. 2. Construction Plant: United States Bureau of Engraving and Printing.

Fig. 1. United States Bureau of Engraving and Printing, Washington.

MARTEN'S PATENT ADJUSTABLE SCAFFOLD BRACKETS.

These brackets, which are made of steel throughout, are largely used in place of the ordinary scaffolding, built up from the pavement and swing cradles hung from the roof. They are light but strong, and can be fitted by unskilled labour in two or three minutes. They are fixed, at any window opening, from the inside of a building, by means of square-threaded steel screw and handle, the wood blocks which clamp against the wall being padded with thick felt. The single bracket is 4 in. wide. Double brackets, about 2 ft. 6 in. wide, are made with fixed wood platform and handrail complete, and are suitable for working at a fixed position. Single brackets may be fixed at each window of a building, and scaffold boards laid from one to the other, thus providing a continuous platform along the front of the same. Messrs. E. A. Reed & Co., Ltd., constructional and mechanical engineers, of No. 14, Victoria-street, Westminster, S.W., are the sole manufacturers.



Adjustable Scaffold Bracket.

THE BUILDING TRADE.

WORKMEN'S COMPENSATION IN NEW YORK STATE.

UNDER this title the *Board of Trade Gazette* for March gives particulars of a new law just coming into force in the state of New York which has some points of interest for us. The new law provides that compensation shall be payable for injuries sustained or death incurred by workpeople engaged in certain occupations deemed to be hazardous.

Compensation must be paid or provided by employers for death or incapacity resulting from accidental injury, without regard to fault as cause of such injury, except where it is occasioned by the wilful intention of the injured workman, or results solely from the intoxication of the injured workman while on duty.

Nothing is said about industrial diseases. An employer can insure against liability under the Act by the payment of premiums to a State Insurance Fund created by the law, or through any ordinary insurance company authorised for the transaction of such business; but, if he does not do one or the other, he must furnish satisfactory proof of his financial ability to pay such compensation, and, if required, must deposit securities.

This is a stronger provision than prevails in this country, where the protection granted against an employer's bankruptcy when he has not covered his risk by insurance is limited to a preferential claim on the bankrupt estate not exceeding £100 in any individual case.

If an employer has failed to cover his liability for the payment of compensation he is precluded from pleading that the injury was caused by the negligence of a fellow-servant, or that the workman assumed the risk of his employment, or that there was contributory negligence on his part. The general effect of these provisions is to make it compulsory for the employers to cover their workmen's compensation risks by insurance.

The basis of compensation is the average weekly wages, by which is meant, no doubt, such a capital sum as will provide weekly compensation payments bearing a defined relation to the average weekly wages earned by a workman at the time of his accident. The amount of compensation in case of death varies in accordance with the family left by the workman, but may not exceed in all two-thirds of the deceased's average weekly wage. Total and permanent disability involves compensation equal to two-thirds of the average weekly wages, while in the case of temporary total disability the same proportion is to be paid during continuance of the disability, for a number of weeks varying according to the extent of the injury, but the total amount paid is not to exceed £729. These provisions are more liberal than those in force here, partly no doubt, due to the higher wages paid in America, but in the case of total or partial incapacity the payment is also relatively higher, being limited here to 50 per cent. of the average weekly earnings as against 66 per cent. there. Experience here is rather against increasing the proportion of compensation paid in respect to disablement. A Commission of five members appointed by the Governor of the State, with the advice and assent of the Senate, is organised to determine all questions as to payment of compensation under the law. It has full powers to compel the attendance of witnesses, etc. Its awards are subject to appeal to the Supreme Court.

This last is an interesting feature. The weak point in the English workmen's compensation law is the excessive cost of determining the compensation, and it is conceivable that a Commission constantly engaged in such work, especially if proper use were made of medical referees, might acquire a skill and competency in dealing with such cases which would make for a much-needed economy.

One provision of the New York Act holds good promise of, on the one hand, maintaining the personal interest of the employer in his injured workmen, and, on the other, provicing that necessary medical supervision from the first which makes for rapid recovery, and checks any tendency to malingering or to the development of a neurasthenic condition very prejudicial to recovery. The provision is that the employer must promptly provide such medical, surgical, or other attendance and nursing for sixty days after the accident, as may be required or requested by the injured workman; but compensation is not to be allowed for the first fourteen days of disability.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ABERDEEN.—Plans passed:—Dwelling-house on the south side of Rubislaw Den South, for Mr. W. D. Jenkins, herring merchant, per Messrs. D. & J. R. M'Millan, architects; garage at rear of No. 447, Great Western-road, for Mr. William Wisely, carting contractor, per Messrs. Wilson & Walker, architects; alterations and additions in connection with the premises, No. 20, Broad-street, for the proprietors of the *Aberdeen Journal*, per Mr. A. H. L. Mackinnon, architect; addition to Spring Garden Provision Works, South Esplanade East, for Messrs. Marshall & Co., preserved provision manufacturers, per Mr. George Coutts, architect; shed on the south-west side of Ruthrieston-road, for Mr. John Milne, gardener, per Messrs. Brown & Watt, architects; alterations in connection with premises, Nos. 52-8, George-street, for the Trustees of Mr. Alexander G. Jessiman, per Mr. W. E. Gauld, architect. The T.C. are proposing extending the police office accommodation, at a cost of £2,700.

Airdrie.—Messrs. Wylie & Son, of Glasgow, have been appointed engineers for the sewage scheme of the T.C.

Basford.—The R.D.C. have been informed by Messrs. Wheeler & Watts, architects, that they have been instructed by Mr. H. Dennis Bayley to prepare a scheme for the erection of about 400 houses for the colliery workmen at Gedling.

Beaconsfield.—Mr. W. Baring Du Pre, M.P., has given a site for a new church in the residential neighbourhood between Beaconsfield and Penn.

Bethnal Green.—The B.C. have entered into a provisional agreement to purchase a site in Cambridge-road upon which to erect a public free library, the cost of which Mr. Carnegie has offered to defray on certain conditions.

Birmingham.—An application has been made by the T.C. to the L.G.B. for sanction to borrow £41,260 for works of sewerage and surface-water drainage, and also £5,150 for the purchase of land for the extension of King's Heath Park. At a recent meeting of the Town Planning Committee of the T.C. plans were approved for the erection of houses in the Harborne and Quinton and East Birmingham town-planning areas. Plans were passed for seventy-seven houses on one estate in East Birmingham, and it is understood that their erection will be commenced immediately.

Braintree.—Plans for the erection of seven houses in the Grenville-road for Messrs. Leich & Bowtell, and seven in Coronation-avenue for Mr. G. Hunnable have been passed.

Broadstairs.—Plans passed by U.D.C.:—Additions to Wycheden, South Cliff-road, for Mr. G. Foster Clark; to the Dingle, North Foreland, for the Rev. Mr. Churchill; to Abbotsford, Western-esplanade, for Miss Parker-Gray; to two houses, West Dumpton-lane, for Messrs. Lubbock & Co.; two houses, Swinburne-avenue, for Messrs. J. A. & W. Tharp; house, St. Mildred's-avenue, Vale Estate, for Mr. A. E. Stannard; two houses, The Vale, for Messrs. Dagley Bros.; alterations to 82, High-street, for Mr. A. E. Nuthall, and to No. 1, Albion-street, for Mr. W. E. Henstead; diversion of roads, Vale Estate, for Mr. J. Olby, and Broadstairs Park Estate, from Salisbury-avenue to Dumpton-road; store and coachhouse, Reading-street, for Mr. W. Harlow.

Buxton.—About £300 is to be spent by the Gardens Company in decorating and reseating the pavilion concert hall.

Calne.—Alterations at St. Mary's School.

Chapel-en-le-Firth.—The R.D.C. have decided that preliminary plans for setting-out houses for the working classes be prepared.

Chasetown.—Tenders have been accepted by the managers for the new schools, which are to be built from designs by Messrs. Harrison & Cox, architects, of Birmingham.

Clippenham.—A L.G.B. inquiry has been held into the application of the T.C. to borrow £2,460 for housing purposes.

Clacton.—The L.G.B. have held an inquiry into the Council's application for sanction to borrow £850 for the purpose of providing a bathing pavilion in the East Cliff.

Clapham.—The Governors of the Westminster Hospital have definitely decided to remove the hospital to a site on Clapham Common.

Cookham.—Plans passed by R.D.C.:—Mr. Loftus Farle, additions and alterations, Rawden Hall, Holyport; Mrs. Cockran, additions and alterations, Winter Hill House, Cookham; Mr. H. W. Jordan, detached house, Cookham Dean; Mr. J. H. Bulkley, detached cottage, West End, Waltham St. Lawrence.

Darwen.—Plans passed by T.C.:—Eleven houses in Baron-street, for Mr. Robert Shorrock; two houses on Hawkshaw Estate, for Messrs. J. & H. Eccles; ten houses at the Spring Vale Garden Village, for Mr. T. P. Davies; alterations at Weavers' Institute in Victoria-street, for the Weavers' Association; twist store at George-street Mill, for Mr. James Halliwell; motor-house in Whitehall-road, for Mr. Joseph Leach; alterations to shop front at No. 2, Falcon-avenue, for Mr. James Horrocks; pulp shed at Hollins Mill, for the Wall Paper Manufacturers, Ltd.; storeroom at Elmhurst, Earnsdale, for Mr. Joseph Catlow.

Dundee.—Sir James Caird, Bart., has presented £100,000 to the city for the purpose of building a new City Hall.

Faversham.—The L.G.B. have sanctioned the borrowing of £3,363 by the T.C. for sewage-disposal works.

Finchley.—The London Diocesan Home Mission district of St. Alban, Golder's Green, of which the Rev. Herbert Trundle has charge, is to have a new church. Mr. Herbert Wills, the architect, shows plans of a building to cost between £8,000 and £8,500, with accommodation for 750 people. If necessary, an extra morning chapel can be provided at a cost of £1,000, while the campanile, about 100 ft. high, will cost about £1,500. The money required now is about £3,500.

Flaxton.—The R.D.C. have passed plans for extensions at Osbaldwick Church, and for a farm homestead on the Easingwold-road at Rawcliffe, for the devisees of the late Earl de Grey.

Foleshill.—Plans passed by the R.D.C.:—Six houses, Booth Fields, Foleshill, for Messrs. Jones & Mason; three houses and shop, Ash Green, Exhall, for Mr. Heritage; two houses, Jacker's-road, Foleshill, for Mr. E. Pearson, jun.; alterations and additions, Bedworth Picture Palace; conversion of school into cottage, Binley, for the Earl of Craven; additions to house, Shilton, for Mr. G. T. Bosworth; four houses, Bell Green-road, Foleshill, for Mr. Marston; sewering of building estate, Stoke, for Messrs. Kelley & Wootton; sewering of building estate, Stoke, for Messrs. Copsewood, Ltd.

Folkestone.—Plans have been passed for the rebuilding of Folkestone Primitive Methodist Church, at a cost of £1,500.

Gillingham.—Plans passed by T.C.:—Additions to St. Barnabas Church, for the Rev. H. Colborn, submitted by Messrs. Cutts, Davis, & Boddy; shop with dwelling and one house, Gillingham-avenue, for Mr. W. Blake, submitted by Mr. A. E. Goodhew; dwelling-house, Orchard-road, Wigmore, for Mr. A. Masters, submitted by Mr. A. E. Goodhew; two houses and shop, Barnacle-road, for Mr. W. K. Hammond, submitted by Mr. F. D. Pott; dwelling-house, First-avenue, for Mr. S. Broadway, submitted by Mr. F. T. Mattocks; 153 houses (forty-nine Portland-road, twenty-six Oak-road, and seventy-eight Maple-road), for Mr. H. Harris; three houses, Gillingham-road, for Mr. E. J. Goodwin, submitted by Mr. L. J. Newnham; alterations and drainage, Stedman's Mill, Strover-street, for mineral water factory, for Messrs. Mackentosh Bros., submitted by Messrs. Ginn & Son; additional room to Oddfellows' Hall, Vicarage-road, submitted by Mr. Perkins; house, Park-avenue, for Mr. J. L. Redfern.

Heath Town.—Plans have been approved for the extension of the Efandem Electric Company's Works, Fallings Park, for the employment of an additional 250 hands.

Hemsley.—Plans passed by R.D.C.:—Two houses, Victoria-road, Caister, for Mr. W. Hayletti; house, Yarmouth-road, Caister, for Mr. G. F. Parker; and additions to house, West Somerton, for Mr. D. Thain.

Hertford.—Plans passed for the erection of a lodge and additions to a cottage at Epping House, also for a pair of cottages, for Mr. Brodie Henderson.

Hinckley.—The L.G.B. have sanctioned the raising of £3,800 for the erection of sixteen workmen's dwellings by the U.D.C.

Ipswich.—The T.C. have adopted plans by Mr. Cantley for extending the isolation hospital, at a total estimated cost of about £6,000.

Leigh.—A L.G.B. inquiry has been held into the application of the T.C. for sanction to borrow £11,420 for the purpose of the gas undertaking, and £6,282 for improvements in Firs-lane and Plank-lane.

Lichfield.—The T.C. has decided to erect twenty workmen's houses on land near Greenough's-row, and the City Surveyor will prepare plans, etc.

Liverpool.—The Justices have sanctioned plans for alterations at the following licensed premises:—48, Standish-street; 234, Vauxhall-road (Mr. Jamieson, architect); 33, Blenheim-street; 124, Great Howard-street; 101, Kilshaw-street;

* See also our list of Competitions, Contracts, etc., on page 483.

RATES OF WAGES IN THE BUILDING TRADE.

The following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur:—

—	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Newcastle	10	10	10	10	10	10	9	6½	6½	6½
Sunderland	10	10	10	10	9½	9	9	6½	6½	7
Darlington	9	9½	9	9½	9½	9	7½	6½	6½	6½
Stockton-on-Tees	9	10	9½	10	10	9½	8½	7	7	7½
Bradford	10	10	9	9½	9½	10	8½	7	7	7
Halifax	9½	9	8½	8½	8½	9	8½	6½	6½	6½
Hull	9½	9½	9½	9½	9½	9½	8½	7	7	7
Leeds	10	10	9½	9½	9	9	8	7	7	7
Sheffield	10½	9½	9½	9½	9½	9½	8½	6½	6½	6½
York	9	9½	8½	9½	9½	8½	7½	6½	6½	6½
London	11½	11½	11½	11½	—	1s.	9	8	8	8
Brighton	8–9	8	8	—	—	—	—	—	—	—
Portsmouth	9	9	9	9	—	8	7½	6½	6½	6½
Southampton	8½	9½	9½	8	—	9½	8½	6½	6½	6½
Maidstone	9	9	9	9	9	9	8	6	6	6
Bristol	9½	9½	9½	9½	—	9½	9	6½	6½	6½
Plymouth	9	9	9	9	—	9	7½	6	6	6
Bath	7½	7½	8	8	7½	7½	7	5–5½	5–5½	5–5½
Cheltenham	8½	8½	8½	8½	—	8½	7½	5½	5½	5½
Exeter	8	8	7½	7½	7½	7½	6½	5	5	5
Gloucester	7½	8½	8½	7½	7½	8½	7½	5½	5½	5½
Hereford	7½	8	7½	8	7½	7½	7	5	5	5
Stroud	7½	7½	7½	7½	7½	7½	7	5	5	5
Blackburn	10	10	9½	9	9½	9½	9½	6½	7	7
Bolton	10	10½	10	10½	9	10	9	—	—	—
Liverpool	11	11	11	10	10	10½	9½	6½	6½	6½
Manchester	10	10½	10½	11	9	10	9½	6½	6½	7½
Oldham	10	10½	10	9½	9	10	9½	6	7	7½
Preston	9½	10	9½	9	8½	9	8½	5½	6	6
Birmingham	10	10	10	10½	9	10½	9	7	7	7
Derby	9½	9½	9	9	9	9	8	6	6	6½
Leicester	9½	9½	9½	10½	9	9½	9	7	7	7½
Nottingham	10	9½	10	10½	9	9½	9	7	7	7½
Norwich	8	8	8	8	8	8	8½	5	5	5
Cambridge	9	8½	8½	9	8	9	7	5½	5½	5½
Oxford	9	8	8½	8½	8	8½	7	6	6	6
Southend	9	9	9	9	Piecework	9	7	6	6	6
St. Albans	9	9	9	10	8½	9	8	6	6	6
Grays	—	10	10	—	—	9½	8½	7	7	7
Cardiff	9½	9½	9½	9½	9½	9½	8½	6½	6½	6½
Swansea	9	9	9	9	8½	9	8½	6	6	6
Newport	9	9	9	9	8½	8½	8½	6	6	6
Chatham	8	9	8½	9	9	8½	7	5½	5½	5½
Birkenhead	11	11	11	10½	10	10	9½	6½	6½	6½

The mason's rate given is for bankers; fixers usually ½d. per hour extra.

1, Rice-lane; 51, Sandhills-lane; 301, Scotland-road; 40-42, Raglan-street, Garston; and 21, Shakespeare-street, Garston.

Llanelly.—The T.C. have decided to proceed forthwith with the building of fifty municipal houses at Capel Ucha. The houses are estimated to cost £225 each, and will be let at 6s. per week.

Loughborough.—A plan, submitted by Messrs. W. E. & M. T. Woolley, for Mr. Walter Mountenay, for the construction of a new street, being an extension of York-road, has been passed.

Lowestoft.—The L.G.B. have sanctioned a loan of £547 for the enlargement of the Royal Plain lavatory.

Margate.—Plans passed by T.C.:—One house, Connaught-road, Mr. A. E. Wiles; two houses, Westcliff-gardens, Mr. P. Levett; bungalow, Dane-road, Mr. W. P. Leach; six houses, Lower Northdown-road, Mr. S. W. Stiff; alterations to Nos. 169 and 171, Northdown-road, Messrs. Reeve & Reeve; additions to Messrs. Bobby & Co.'s premises, Northdown-road, Messrs. Reeve & Reeve; house, Fifth-avenue, Messrs. Reeve & Reeve; alterations to No. 33, High-street and adjoining cottage, Mr. G. Reeves.

Newark.—Three new cottage homes, or almshouses, are to be erected by the St. Leonard's Hospital Trustees at Newark on the site adjoining those built a few years ago on London-road. Mr. W. Smith has obtained the contract.

Newmarket.—Plans, deposited on behalf of Lord St. Davids, for a pair of cottages on Windmill-road, Exning, approved. The Surveyor's plans and specifications for the laying-out of the Memorial Hall grounds have also been approved.

Nottingham.—It has been decided to proceed with the erection of the hall as a memorial to the late General Booth, and Mr. J. Wright has been entrusted with the contract.

Ossett.—The Joint Hospital Board are applying to the L.G.B. for sanction to a loan for £950 for additions to the hospital administrative buildings.

Oswestry.—Plans approved:—Addition to cottages at the brick kilns for Lord Harlech; conversion and alterations to property in Duke-street, for Mrs. Aston; addition to offices in Upper Brook-street, for Messrs. Longueville & Co.; additions to 11, Victoria-road, for Trustees of the late Mr. Thomas Davies.

Peterborough.—A plan from Messrs. Townsend & Fordham, showing alterations and improvements to the Corn Exchange entrance, has been approved.

Plymouth.—A new public school is to be built, at an estimated cost of £24,672, from the plans of Messrs. Thornley, Rooke, & Barron, architects.

Portknockie.—The offer of Messrs. Cooper & Paris, contractors, of Dunfermline, has been accepted by the T.C. for the extension of the harbour, which it is estimated will cost £8,000.

Ramsbottom.—Owing to the scarcity of houses in the district, the Co-operative Society is carrying out a scheme for providing dwellings for its members.

Reading.—A new market building is to be erected by the T.C., at a cost of £985. The Queen's Hotel, for many years one of the principal hotels in the town, has been closed, the site having been acquired for the new post-office building.

Rochester.—The T.C. are to erect a convenience in the yard of the Angel Inn, Strood, at an estimated cost of £221. Plans passed:—Stores for motor-cars, London-road, Strood Intra, for Messrs. Ballard & Bourne; house, Mount-road, Borstal, for Mr. J. H. Martin; two cottages, Tower Field, St. Margaret-street, for Mr. Charles Willis.

St. Just.—House for Mr. W. J. Butters, of Pendeen.

Scarborough.—The T.C. has decided to proceed with the formation of a bathing pool in the South Bay, at a cost of £5,000, and to make application for loans for £4,525 for new paths in the South Cliff Gardens, and £8,200 for the erection of refreshment-rooms, bungalows, pavilions, conveniences, and other buildings in the gardens.

Seaham Harbour.—A Sub-Committee of the U.D.C. has been appointed to consider the question of the erection of a Council chamber, and of architects being appointed to send in competitive designs.

Sedbergh.—Plans have been passed by the U.D.C. for a Wesleyan church, and a house near Archers Hall, for Mrs. Burra.

Sheffield.—The Improvements Committee recommend the T.C. to sell the surplus land at the corner of Waingate and Exchange-street for £38,000 to the Brightside and Carbrook Co-operative Society for the erection of a building not less than three stories high, of which plans must be submitted for approval. It is understood that the society have a big scheme on hand for a central stores on this site. The sanction of the L.G.B. has been given to borrow £5,000 to purchase land for £1,700 from Mr. Bernard A. Firth to widen Chesterfield-road, and £3,300 for the necessary street works.

Southend.—The E.C. have decided to enlarge the Westborough School, at an estimated cost of £700.

Stafford.—Plans passed:—Gaol-square Motor Company, Ltd., temporary alterations and extensions to motor garage; Messrs. George Sandy & Co., two dwelling-houses and shops, Small-man-street.

Swindon.—The Borough Surveyor has been instructed to prepare plans and estimates for the extension of the Town Hall. Plans passed:—Messrs. Bishop & Fisher, for Messrs. Joseph Grundy & Co., Bridport, a factory proposed to be erected on land off Newcastle-street; Imperial Tobacco Company, Ltd., chimney stack, Colborne-street; Mr. J. A. J. Dangerfield, shop front, 72, Kingshill-road; Mrs. H. Powell, store for groceries, 55, Elmina-road; the Rev. E. A. Topley, Parish Hall, Southbrook-street; Messrs. Boots, Ltd., additions at rear of Nos. 27 and 28, Bridge-street.

Torquay.—The T.C. have decided to augment the electric lighting station, and have adopted the following estimates:—First section, extension of boiler-house, £4,440; second section, new engine-room, £9,517; third section, new switch-control chamber, £1,765; total, £15,722.

Wareham.—A L.G.B. inquiry has been held into the application of the R.D.C. for sanction to borrow £2,200 for a water supply to Corfe Castle. Mr. H. W. Woodall is the engineer.

Westbourne.—A L.G.B. inquiry has been held into the application of the R.D.C. for sanction to borrow £6,402 for a water supply.

Worthing.—Plans for extending the bandstand enclosure seawards, at an estimated cost of £5,800, and for erecting an additional shelter on the parade, opposite Steyne-gardens, at a cost of some £900, are being considered.

Windsor.—Plans passed:—For Messrs. J. Canning & Son, for alterations at the Royal Brewery, Peascod-street; Messrs. J. Martin & Co., Ltd., for a motor garage and covered way at the rear of Beaumont House, St. Leonard's-road.

WAGES IN THE BUILDING TRADE.

Birmingham.—The Birmingham and District Branch of the National Association of Master Heating and Domestic Engineers has had under consideration an application from the local branch of the National Union of Operative Heating and Domestic Engineers for an increase in wages of 1½d. per hour (6½d. to 10d.), the application being made by them on the following grounds:—"The increased cost of living generally and the efforts of all classes of workmen recently to gain extra remuneration towards meeting this extra cost; also to bring our members into line with other skilled workmen in the building trade." The application was carefully considered at two meetings of the employers and a reply sent that 8½d. per hour which the operatives are at present receiving is as high a rate as is paid to hot water fitters in any part of the country except London, and that in agreeing to the last advance, the employers had expected the Operatives' Union would see that all fully qualified fitters worked at not less than the standard rate of wages. It was further pointed out that the employers' attention had been drawn to instances where fully qualified fitters had not been so paid.

Darlington.—Notices for increased wages have been received from the operatives in this district as follows:—Carpenters and joiners, 9d. to 10d. per hour from May 7, 1914; woodcutting machinists' general hands, 9d. to 10d. per hour; others, 8d. to 9d. from June 1, 1914.

Durham.—The bricklayers and joiners in this district are asking for increases in wages, the former from 9d. to 10d. per hour from May 1, 1914, and the latter from 9d. to 9½d. per hour from May 9, 1914.

Glossop.—The operative painters in this district have come out on strike to enforce a demand for an advance in wages of 1½d. per hour (8d. to 9½d.) and a reduction in the working hours from 50 to 49½ hours per week. The employers have offered an advance of ½d. per hour, which has been refused by the men.

Heywood.—On and after May 1, 1914, an increase in wages of ½d. per hour (10d. to 10½d.) will be paid to the bricklayers in this district.

Liverpool.—The employers have agreed to advance the wages of the plasterers from 10d. to 11d. per hour from May 1, 1914, and have also granted an alteration in the overtime rate to time and a quarter for the first two hours instead of time and a quarter up to 10 p.m.

London.—A special meeting of the Augmented National Board of Conciliation for the Building Trades is being held to-day to consider the answer of the London Master Builders' Association to the recommendation made by the Board on March 17. (Fully reported in our last issue.)

Middleton.—The bricklayers have given notice of a demand for an increase in wages of 1d. per hour (10d. to 11d.) from May 1, 1914.

New Mills.—The carpenters and joiners have been granted an increase in wages of ½d. per hour (8d. to 8½d.) from March 25, 1914, and to 9d. per hour from July 1, 1914, and alterations to working hours to 51½ hours in the summer and 49½ and 44 in the winter. The labourers will be paid an increase of ½d. per hour (5½d. to 6d.) from May 1, 1914.

Prestatyn.—The builders' labourers in this district gave the employers notice for a minimum wage of 6½d. per hour. The masters replied with the following offer:—General labourers, 5½d. per hour in summer and 5½d. in winter; hod-carriers, 5½d. in summer and 6d. in winter; to operate from the first week in July. The labourers met to consider the employers' offer and unanimously agreed not to accept it.

Rochdale.—An advance in wages of ½d. per hour (10d. to 10½d.) has been granted to the bricklayers from May 1, 1914.

Scarborough.—The employers and the operative joiners in this district have been unable to come to a decision on the demand of the latter for an increase in wages of 1d. per hour. The matter now goes to the Northern Centre Board of Conciliation for the Building Trades.

Sheffield.—An increase in wages of ½d. per hour (10d. to 10½d.) will be paid to the stonemasons in this district as from April 15.

Sunderland.—The stonemasons in this district are demanding an advance in wages of ½d. per hour, bankers from 10d. to 10½d., and fixers from 10½d. to 11d., as from May 1, 1914.

Sutton Coldfield.—Advances in wages of ½d. per hour have been granted to the bricklayers (9½d. to 10d.) and labourers (6½d. to 7d.) as from April 1.

Teesside.—The employers have received notice of the following demands by the operatives of this district:—Carpenters and joiners 9½d. to 10d.; stonemasons, bankers, 9d. to 10d., fixers, 9½d. to 10d., and alterations to worked stone rule, as from May 1, 1914.

GENERAL BUILDING NEWS.

HOUSE, KINGSTON-HILL.

A country house, to be called "Haygreen," is in course of erection on Kingston-hill. It is in the Georgian style. The architect is Mr. E. Keynes Purchase, F.R.I.B.A., Maddox-street, W., and Mr. F. G. Minter, Putney, is the general contractor and decorator. The bricks are by Messrs. S. & E. Collier, Ltd., Reading; the tiles by Messrs. Roberts, Adlard, & Co., Bermondsey; and the lead rainwater heads by Messrs. H. W. Cashmore & Co., Victoria-street, Westminster, S.W. The sanitary fittings will be by Messrs. Davis, Bennett, & Co., Horseferry-road, S.W., and the heating by Messrs. Richard Crittall & Co., Ltd., Wardour-street, W. The architectural carving is by Mr. W. Hearn, Kennington, S.E.

OFFICES, ETC., OLD BAILEY, E.C.

Green Arbour House, Old Bailey, is in course of erection for the South-Eastern and Chatham Railway, for the purposes of offices, etc. The architects are Messrs. Yetts, Sturdy, & Usher, Finsbury-pavement, E.C. The general contractors are Messrs. Ford & Walton, Ltd., Kilburn, and the steelwork is by Messrs. Dorman, Long, & Co., Middlesbrough. The stonework is by the United Stone Firms, Ltd., London and Bristol, and the bricks are by the Farnley Iron Company, Ltd., Queen Victoria-street, E.C. Messrs. Hammond & Champness, Ltd., Alfreton-street, E.C., are installing the lifts, and Messrs. Speedy, Eynon, & Co., Duke-street, Adelphi, are the electrical engineers. The expanded metal floors are by the Expanded Metal Company, Ltd., Westminster, and the landings, etc., by the Patent Victoria Stone Company, Ltd., Hamilton House, E.C. The heating of the building will be arranged by Messrs. Benham & Sons, Ltd., Wigmore-street, W.

LUDGATE-HILL STATION.

A large scheme for improving Ludgate-hill Station (South-Eastern and Chatham Railway) and for extending the refreshment-room accommodation in connection therewith, is being carried out. There will be a new frontage to New Bridge-street. The ground floor of the new building will contain shops, the first floor will be occupied by a *café*, the second floor will include a large dining-room, and the remainder of the structure will be devoted to administrative offices. Some engineering difficulties have been encountered through the presence of the Fleet River, but these have been overcome, and it is hoped that the building will be completed by the end of the year. Messrs. Yetts, Sturdy, & Usher, Finsbury-pavement, E.C., are the architects. Messrs. Killby & Gayford, Ltd., Worship-street, E.C., are the contractors for the foundations, etc., and Messrs. Richard Moreland & Son, Ltd., Goswell-road, E.C., are the steelwork engineers. The superstructure will be begun shortly.

OFFICES, ETC., CITY-ROAD, E.C.

The block of offices at 120-122, East-road, City-road, has been erected from the designs of Messrs. Lovegrove & Papworth, Old-street, E.C., the general contractors being Messrs. Sabey & Son, Ltd., St. Peter's-street, Islington, N. The fittings in the offices on the ground floor have been carried out in mahogany with leaded lights. The upper floors comprise residential flats for confidential clerks who have to live on the premises to receive night orders. The constructional steelwork is by the Aston Construction Company, Eagle Wharf-road, Hoxton, N.; the carving is by Messrs. Gilbert Seale & Son, Ltd., Borough; and the asphalt by the London Asphalte Company, Ltd., Finsbury-pavement House, E.C.

ALBEMARLE HOUSE, W.

Albemarle House, 27, Albemarle-street, W., is in course of erection from the designs and under the superintendence of Messrs. Rix & Wilkins, Budge-row, Cannon-street, E.C. The building will consist of a showroom for motor-cars or otherwise on the ground floor and a series of bachelor flats over. The general contractors are Messrs. Peppiatt & Cooper, Gwydir-chambers, High Holborn, W.C. The steelwork, etc., is by the Indented Bar and Concrete Engineering Company, Ltd., Queen Anne's-chambers, Westminster; Messrs. Field, Mallet, & Co., Ltd., St. Dunstan's-hill, E.C., are supplying the staircases, balconies, etc.; Messrs. T. T. Gething & Co., Ltd., Warwick-road, Kensington, are the stone merchants; Messrs. Bradford & Co. are doing the carving; and the lifts are by Messrs. R. Waygood & Co., Ltd., Falmouth-road, Great Dover-street, S.E.

TRADE NEWS.

Messrs. Young & Marten, Ltd., of Caledonian Works, Stratford, E., are issuing on May 1 an up-to-date catalogue, which will consist of 800 art pages, profusely illustrated, containing a unique display of requisites for building construction. They are prepared to supply copies free to *bond-fide* buyers upon receipt of card and postal order for 5s. deposit, which will be allowed off first £5 order.

Under the direction of Messrs. A. F. Scott & Son, architects, Norwich, Boyle's latest patent "air-pump" concealed ventilators have been applied to the new Primitive Methodist church and school, The Broadway, Letchworth.

We are informed by Marblagis, Ltd., that they have purchased the business and patents, plant and mines of the late Brothers Patent Plaster Company, Ltd., and that they will continue to make the plaster cement, Marblite. If any of our readers will send a postcard for Catalogue A to Messrs. Marblagis, Ltd., East Leake, near Loughborough, and will mention the *Builder*, this booklet describing Marblite will be sent to them post free by return.

The St. Simon's School, Salford, is being supplied with Shorland's warm-air ventilating patent Manchester school stoves by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

PARLIAMENTARY NOTES.

The Mall Improvement.

The Mall Approach Improvement Bill has now passed Second Reading, and will go before a Committee of five members. Under the Bill it is provided that an expenditure of £115,000 shall be made on the improvement. In one clause of the Bill there is power for the First Commissioner of Works to exercise a veto over the design of the buildings to be erected on the site to be acquired.

Sir Walter Essex complained that the powers taken in the Bill were inadequate. He thought that they should in the very centre of the Empire safeguard themselves against any further extension of the architectural abominations which were a heartache and sorrow to many of them. The proposal was that the two insurance companies, who were to build, should do so under plans provided by themselves and their own architects. He contended that a control should have been exercised by the Government in the very control of the architect.

Cost of Labourers' Cottages.

Mr. Lane Fox asked the President of the Board of Agriculture whether, in view of the growing cost of building, the Board estimated that they could in future build good labourers' cottages at a lower cost than £218 per cottage, and, if so, in what directions did they look for saving of cost.

Mr. Runciman asked that the Hon. Member should await the publication of the Report of the Committee considering the matter.

Delhi.

Mr. Touche asked the Under-Secretary of State for India:—(1) When the sum of £1,000,000 was provided for unforeseen expenditure in connection with the new capital at Delhi; and was it included in the original estimate of £4,000,000. (2) Whether the revised estimate of expenditure in connection with the new capital at Delhi included the proposed railway terminus and all costs involved in the transfer of the capital, whether incurred at Delhi or elsewhere; and was it now anticipated that the ultimate total cost would not be materially more than 50 per cent. in excess of the original estimate, or what is the estimated excess. (3) How much had already been expended in respect of the revised estimate of £5,113,000 expenditure, reported by the Viceroy as having been approved by the Government of India in respect of the new capital at Delhi and of the additional sum of £1,000,000 for unforeseen expenditure.

Mr. C. Roberts, in reply, said the £4,000,000 originally mentioned was expressly stated to be based on scanty data, and was little more than a rough and general forecast of what the works likely to be required for the new capital might cost in the aggregate. On March 25 he stated that the estimates as now approved by the Government of India amounted to £5,113,000, with an additional £1,000,000 held in reserve for unforeseen expenditure. These amounts were exclusive of the cost of moving and enlarging the cantonment, and of improving the present railway arrangements. As regards the latter, no decision had yet been come to. Expenditure elsewhere than at Delhi was not included in the figures. Of the estimated expenditure of £5,113,000, £407,000 had been spent on and before January 31 last.

Sir J. D. Rees asked the Under-Secretary of State for India if he would state when the Government of India proposes to put forward a comprehensive and inclusive estimate of the cost of establishing a new capital at Delhi; and whether the figure given by the Viceroy on March 24, viz., £6,000,000, was to be regarded as having more finality than the preceding estimate of £4,000,000.

Mr. C. Roberts replied that the final estimates for the new capital were expected from India very shortly. The answer to the second part of the question was in the affirmative. Detailed plans and estimates, based on carefully ascertained requirements, were likely to have more finality than a rough forecast.

Winchester Army Depôt.

Mr. Tennant has informed Major Baring that it is hoped to erect about 120 married quarters at the Winchester Depôt at an estimated expenditure of £20,000.

Saughton Mains Prison.

Mr. McKinnon Wood has informed Mr. J. Hogge that a beginning has been made with the construction of main sewers and drains for the new prison at Saughton, and further work would be taken in hand shortly. He, however, required notice of a further question as to whether the plans were being given out competitively.

WESTMINSTER CITY COUNCIL.

AT the fortnightly sitting of the Westminster City Council on April 7 the following matters were dealt with:—

British Columbia Building.—A letter was received from Mr. A. Burr, F.R.I.B.A., pointing out that some of the Council's conditions with regard to vaults, pavement lights, etc., at the premises No. 1, Regent-street were impossible of being carried out, and urging further consideration to meet the requirements of rights of his clients, the Government of British Columbia, who were the lessees of the site from the Crown. The Council agreed to various modifications.

Old Barrack-yard.—A petition, signed by a number of occupiers in the vicinity of Old Barrack-yard, was presented, strongly protesting against the proposal, stated to be under consideration, for building a large motor garage in the yard. The Highways Committee reported that the Council had no jurisdiction in the matter.

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(Before Mr. Justice ASTBURY.)

Ancient Light Litigation: Cope against Lyons & Co., Ltd.

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Mr. Russell observed that the plaintiff was not asking for damages; he wanted his light.

Mr. Younger replied that the defendants denied liability, and asserted that, by their improvement, the plaintiff would have more light than before.

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His Lordship (to Mr. Russell): Had not I better go and see these premises? You and Mr. Younger had better take me.

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His Lordship: I remember when I was in the House of Lords a model was handed in and I was never allowed to say another word. That was the way in the House of Lords. I wondered whether this model was to be like that. It looks to me as though the plaintiff's windows facing the Strand would be shut out altogether.

Mr. Younger: The plaintiff, to a large extent, has elected to live in a hole. He seems to like it.

His Lordship: But if you live in a hole where you get very little light, that surely makes the question of a further obstruction very much worse. Here is a skylight near the ground, but that is under direct light from the empyrean, and, since Colls's case, it is held you cannot have an obstruction of a skylight.

Mr. Russell said he especially complained of the loss of light to the staircase window and the office window at the bottom. They could not complain, the defendants urged, in respect of windows looking north, because they had already allowed somebody else to build a wall and to block out some of the light. But that was a mare's nest—a wall was always there. It was heightened, and by an arrangement no light was taken away at all. While the wall was raised something else was swept away.

Mr. Younger: And we are taking something away. There are the outbuildings, which are by no means low buildings, and we are taking back the general line of these buildings some 6 ft.

Mr. Russell replied that it was to give nothing if at the same time the line of the principal building was being brought further forward.

The first witness, Mr. Herbert Philip Fletcher, F.R.I.B.A., F.S.I., said that was exactly what the defendants were doing, and their new building at one point represented to the plaintiff a loss of light to be put at 15½ degrees. The witness had had wide experience of estimating property value, and he calculated the loss of letting value of the plaintiff's house at £50. Capitalised at twenty years, that was £1,000. The increase of light at a narrow slit of 8 ft. or 10 ft. did not compensate for direct light lost elsewhere. No substantial amount of direct light could come through a slit. The new building would make the plaintiff's office unusable except by artificial light.

Cross-examined, he admitted that if the defendants put back 5 ft. or 6 ft. a line representing outbuildings going up 28 ft. 9 in. (though he did not admit that measurement), there might be more diffused light, supposing the new building went no higher than 29 ft. 3 in. But this was bringing forward the main line. He understood the house was sold in 1907 for £4,000 on account of the bad light, and he knew the defendants were going to face all the buildings with white tiles. That did not alter his opinion as to diminished light and depreciated letting value.

Sir A. Brumwell Thomas, F.R.I.B.A., gave corroborative evidence. He considered, he said, the width of this court of paramount importance for the plaintiff's office and other windows. Glazed bricks would not give adequate value for what had been taken away.

Plaintiff gave evidence as to the sources of his light, and indicated the extent to which the use of his office would be prejudiced by its reduction. In a previous instance, where a building had reduced his light, compensation was forthcoming in a special increase in another direction.

On the conclusion of the plaintiff's cross-examination, Mr. Frank Russell said he thought if the Court would allow a consultation some understanding might be come to.

After a conference between Counsel, Mr. Younger announced that the model on his Lordship's desk might now be put out of sight.

Mr. Russell stated that the plaintiff would accept an agreed sum as costs of the action, and the proceedings would be stayed on the understanding that the plaintiff would be able to raise his building at any time to a height equal to the defendants'.

KING'S BENCH DIVISION.

(Before Mr. Justice LAWRENCE.)

War Office Sue Architect and Engineers: Secretary of State for War *v.* Kirkland & Capper and Another.

THIS was an action brought by the Secretary of State for War against Messrs. Kirkland & Capper, electrical engineers, of 17, Victoria-street, Westminster, and Mr. John H. T. Woodd, an architect, of Broad Sanctuary-chambers, Tothill-street, Westminster, claiming to recover damages against both the defendants in connection with their supervision of certain electrical works erected by the War Office, and entitled the New Medical Staff College and Laboratory at Millbank.

Both the defendants denied being guilty of negligence.

For the War Office the Solicitor-General, Sir Stanley Buckmaster, K.C., M.P., Mr. Gordon Hewart, K.C., M.P., and Mr. Brandon appeared; for the defendant, Mr. Woodd, Mr. M. Shearman, K.C., and Mr. Eustace Hills (instructed by Messrs. Dowson, Ainslie, & Co.); and for the defendants, Messrs. Kirkland & Capper, Mr. A. J. Walter, K.C., and Mr. G. R. Blanco White (also instructed by Messrs. Dowson, Ainslie, & Co.).

The history of the case, said the Solicitor-General, in opening, was quite simple, but something would depend upon the construction of the documents. In 1903 the War Office were engaged in constructing at Millbank this Medical College, a large and fine building, having residential quarters for the officers and a large laboratory. The defendant, Mr. Woodd, was engaged as architect at a commission of 5 per cent. on November 3, 1903, and it was his duty to superintend the whole of the works of the building, including the installation of lighting; but the contract expressly provided that the lighting-work should be placed in the hands of experts. In February, 1904, the defendants, Messrs. Kirkland & Capper, were employed by the plaintiffs through Mr. Woodd to supervise the electrical lighting of the building. The acceptance was recommended to the War Office of two tenders submitted by Messrs. John Bolding & Sons, Ltd., for the installation, the amount being £836, in respect of the residential portion of the building, and £801 for the laboratories. These were accepted by the War Office early in 1905. Messrs. Bolding & Sons, Ltd., undertook to execute the work in accordance with the current Board of Trade regulations and the wiring rules of the Institution of Electrical Engineers.

In connection with the wiring of the building for electric light, it was stipulated that lead-covered wire should only be used in cases where the wires were passed through cornices, mouldings, or walls, and the plaintiff's complaint was, that the defendants, Mr. Woodd and Messrs. Kirkland & Capper, had approved of the wiring of this place throughout with these lead-covered cables. A further ground of complaint was that the wires were hidden in plaster.

The defendants (it was alleged) took no steps to ascertain where the wires were laid that fed the lights, and the whole wiring-work was extremely unsatisfactory, and it would be contended for the War Office that the certificate for payment for the work was negligently given. The system was found to be a failure, and then it was asserted that some of the circuits had gone wrong because attempts had been made to repair them by Royal Engineers, and that this work had been clumsily and improperly done; but the plaintiff's case was, that this could not be possibly held to account for the utter failure which was found. The only remedy was to rewire throughout, and this was done by Messrs. Foote & Milne in April, 1910. These were the facts of the dispute, and Counsel would contend that there was a clear case of negligence against the defendants as supervisors.

At this stage, Mr. Walter, K.C., remarked that he denied the negligence, and proposed to show that the trouble was caused by interference with the work after it was done.

Mr. Justice Lawrence said that, without expressing any opinion of the question of damages, it might appear, when they got further, that the matter would be so detailed that some expert or referee would have to investigate the items and calculate the possible damage.

The various documents and contracts were dealt with at great length by the Solicitor-General, who pointed out that the contract with Mr. Woodd provided that he should, as an architect, superintend the building and have as remuneration a commission of 5 per cent. on the net cost of the building and works completed under his direction; and it threw on him the responsibility for the proper supervision of the execution of the work. Generally speaking, Mr. Woodd was to be responsible for the lighting, as also for the rest of the building under Clause IV.

The technicalities of electric wiring were explained in great detail by the Solicitor-General, and also the various acts which it was alleged were contrary to the contract and to which the charge of negligence related.

Mr. Woodd totally denied negligence, and he referred to the fact that the contract provided for the electric lighting to be placed in the hands of experts, and that they were to be responsible to the War Office.

On behalf of Mr. John Henry Townsend Woodd, Mr. Shearman said he could state at once that his position was that he was architect for the building, and the engineers had to do with the electric lighting. Mr. Woodd would contend that he was not responsible for the electric lighting, except so far as seeing that the electric-light works did not interfere with the proper building of the house. He was entitled to give instructions to the engineers, in so far as it assured no interference with the building. The contract provided for the employment of electrical experts, and they were so employed, and Mr. Woodd's position, briefly put, was: "They are the engineers; I am the architect."

Sir Stanley Buckmaster said that what had caused this system to fail was the putting of lead-covered conductors into plaster without proper protection, and he could not see how any of the defendants could evade

GENERAL BUILDING NEWS.

HOUSE, KINGSTON-HILL.

A country house, to be called "Haygreen," is in course of erection on Kingston-hill. It is in the Georgian style. The architect is Mr. E. Keynes Purchase, F.R.I.B.A., Maddox-street, W., and Mr. F. G. Minter, Putney, is the general contractor and decorator. The bricks are by Messrs. S. & E. Collier, Ltd., Reading; the tiles by Messrs. Roberts, Adlard, & Co., Bermondsey; and the lead rainwater heads by Messrs. H. W. Cashmore & Co., Victoria-street, Westminster, S.W. The sanitary fittings will be by Messrs. Davis, Bennett, & Co., Horseferry-road, S.W., and the heating by Messrs. Richard Crittall & Co., Ltd., Wardour-street, W. The architectural carving is by Mr. W. Hearn, Kennington, S.E.

OFFICES, ETC., OLD BAILEY, E.C.

Green Arbour House, Old Bailey, is in course of erection for the South-Eastern and Chatham Railway, for the purposes of offices, etc. The architects are Messrs. Yetts, Sturdy, & Usher, Finsbury-pavement, E.C. The general contractors are Messrs. Ford & Walton, Ltd., Kilburn, and the steelwork is by Messrs. Dorman, Long, & Co., Middlesbrough. The stonework is by the United Stone Firms, Ltd., London and Bristol, and the bricks are by the Farnley Iron Company, Ltd., Queen Victoria-street, E.C. Messrs. Hammond & Champness, Ltd., Alfreton-street, E.C., are installing the lifts, and Messrs. Speedy, Eynon, & Co., Duke-street, Adelphi, are the electrical engineers. The expanded metal floors are by the Expanded Metal Company, Ltd., Westminster, and the landings, etc., by the Patent Victoria Stone Company, Ltd., Hamilton House, E.C. The heating of the building will be arranged by Messrs. Benham & Sons, Ltd., Wigmore-street, W.

LUDGATE-HILL STATION.

A large scheme for improving Ludgate-hill Station (South-Eastern and Chatham Railway) and for extending the refreshment-room accommodation in connection therewith, is being carried out. There will be a new frontage to New Bridge-street. The ground floor of the new building will contain shops, the first floor will be occupied by a *café*, the second floor will include a large dining-room, and the remainder of the structure will be devoted to administrative offices. Some engineering difficulties have been encountered through the presence of the Fleet River, but these have been overcome, and it is hoped that the building will be completed by the end of the year. Messrs. Yetts, Sturdy, & Usher, Finsbury-pavement, E.C., are the architects. Messrs. Killby & Gayford, Ltd., Worship-street, E.C., are the contractors for the foundations, etc., and Messrs. Richard Moreland & Son, Ltd., Goswell-road, E.C., are the steelwork engineers. The superstructure will be begun shortly.

OFFICES, ETC., CITY-ROAD, E.C.

The block of offices at 120-122, East-road, City-road, has been erected from the designs of Messrs. Lovegrove & Papworth, Old-street, E.C., the general contractors being Messrs. Sabey & Son, Ltd., St. Peter's-street, Islington, N. The fittings in the offices on the ground floor have been carried out in mahogany with leaded lights. The upper floors comprise residential flats for confidential clerks who have to live on the premises to receive night orders. The constructional steelwork is by the Aston Construction Company, Eagle Wharf-road, Hoxton, N.; the carving is by Messrs. Gilbert Seale & Son, Ltd., Borough; and the asphalt by the London Asphalte Company, Ltd., Finsbury-pavement House, E.C.

ALBEMARLE HOUSE, W.

Albemarle House, 27, Albemarle-street, W., is in course of erection from the designs and under the superintendence of Messrs. Rix & Wilkins, Budge-row, Cannon-street, E.C. The building will consist of a showroom for motor-cars or otherwise on the ground floor and a series of bachelor flats over. The general contractors are Messrs. Peppiatt & Cooper, Gwydir-chambers, High Holborn, W.C. The steelwork, etc., is by the Indented Bar and Concrete Engineering Company, Ltd., Queen Anne's-chambers, Westminster; Messrs. Field, Mallet, & Co., Ltd., St. Dunstan's-hill, E.C., are supplying the staircases, balconies, etc.; Messrs. T. T. Gething & Co., Ltd., Warwick-road, Kensington, are the stone merchants; Messrs. Bradford & Co. are doing the carving; and the lifts are by Messrs. R. Waygood & Co., Ltd., Falmouth-road, Great Dover-street, S.E.

TRADE NEWS.

Messrs. Young & Marten, Ltd., of Caledonian Works, Stratford, E., are issuing on May 1 an up-to-date catalogue, which will consist of 800 art pages, profusely illustrated, containing a unique display of requisites for building construction. They are prepared to supply copies free to *bond-fide* buyers upon receipt of card and postal order for 5s. deposit, which will be allowed off first £5 order.

Under the direction of Messrs. A. F. Scott & Son, architects, Norwich, Boyle's latest patent "air-pump" concealed ventilators have been applied to the new Primitive Methodist church and school, The Broadway, Letchworth.

We are informed by Marblægis, Ltd., that they have purchased the business and patents, plant and mines of the late Brothers Patent Plaster Company, Ltd., and that they will continue to make the plaster cement, Marblite. If any of our readers will send a postcard for Catalogue A to Messrs. Marblægis, Ltd., East Leake, near Loughborough, and will mention the *Builder*, this booklet describing Marblite will be sent to them post free by return.

The St. Simon's School, Salford, is being supplied with Shorland's warm-air ventilating patent Manchester school stoves by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

PARLIAMENTARY NOTES.

The Mall Improvement.

The Mall Approach Improvement Bill has now passed Second Reading, and will go before a Committee of five members. Under the Bill it is provided that an expenditure of £115,000 shall be made on the improvement. In one clause of the Bill there is power for the First Commissioner of Works to exercise a veto over the design of the buildings to be erected on the site to be acquired.

Sir Walter Essex complained that the powers taken in the Bill were inadequate. He thought that they should in the very centre of the Empire safeguard themselves against any further extension of the architectural abominations which were a heartache and sorrow to many of them. The proposal was that the two insurance companies, who were to build, should do so under plans provided by themselves and their own architects. He contended that a control should have been exercised by the Government in the very control of the architect.

Cost of Labourers' Cottages.

Mr. Lane Fox asked the President of the Board of Agriculture whether, in view of the growing cost of building, the Board estimated that they could in future build good labourers' cottages at a lower cost than £218 per cottage, and, if so, in what directions did they look for saving of cost.

Mr. Runciman asked that the Hon. Member should await the publication of the Report of the Committee considering the matter.

Delhi.

Mr. Touche asked the Under-Secretary of State for India:—(1) When the sum of £1,000,000 was provided for unforeseen expenditure in connection with the new capital at Delhi; and was it included in the original estimate of £4,000,000. (2) Whether the revised estimate of expenditure in connection with the new capital at Delhi included the proposed railway terminus and all costs involved in the transfer of the capital, whether incurred at Delhi or elsewhere; and was it now anticipated that the ultimate total cost would not be materially more than 50 per cent. in excess of the original estimate, or what is the estimated excess. (3) How much had already been expended in respect of the revised estimate of £5,113,000 expenditure, reported by the Viceroy as having been approved by the Government of India in respect of the new capital at Delhi and of the additional sum of £1,000,000 for unforeseen expenditure.

Mr. C. Roberts, in reply, said the £4,000,000 originally mentioned was expressly stated to be based on scanty data, and was little more than a rough and general forecast of what the works likely to be required for the new capital might cost in the aggregate. On March 25 he stated that the estimates as now approved by the Government of India amounted to £5,113,000, with an additional £1,000,000 held in reserve for unforeseen expenditure. These amounts were exclusive of the cost of moving and enlarging the cantonment, and of improving the present railway arrangements. As regards the latter, no decision had yet been come to. Expenditure elsewhere than at Delhi was not included in the figures. Of the estimated expenditure of £5,113,000, £407,000 had been spent on and before January 31 last.

Sir J. D. Rees asked the Under-Secretary of State for India if he would state when the Government of India proposes to put forward a comprehensive and inclusive estimate of the cost of establishing a new capital at Delhi; and whether the figure given by the Viceroy on March 24, viz., £6,000,000, was to be regarded as having more finality than the preceding estimate of £4,000,000.

Mr. C. Roberts replied that the final estimates for the new capital were expected from India very shortly. The answer to the second part of the question was in the affirmative. Detailed plans and estimates, based on carefully ascertained requirements, were likely to have more finality than a rough forecast.

Winchester Army Depôt.

Mr. Tennant has informed Major Baring that it is hoped to erect about 120 married quarters at the Winchester Depôt at an estimated expenditure of £20,000.

Saughton Mains Prison.

Mr. McKinnon Wood has informed Mr. J. Hogge that a beginning has been made with the construction of main sewers and drains for the new prison at Saughton, and further work would be taken in hand shortly. He, however, required notice of a further question as to whether the plans were being given out competitively.

WESTMINSTER CITY COUNCIL.

AT the fortnightly sitting of the Westminster City Council on April 7 the following matters were dealt with:—

British Columbia Building.—A letter was received from Mr. A. Burr, F.R.I.B.A., pointing out that some of the Council's conditions with regard to vaults, pavement lights, etc., at the premises No. 1, Regent-street were impossible of being carried out, and urging further consideration to meet the requirements of rights of his clients, the Government of British Columbia, who were the lessees of the site from the Crown. The Council agreed to various modifications.

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CHANCERY DIVISION.

(Before Mr. Justice ASTBURY.)

Ancient Light Litigation: Cope against Lyons & Co., Ltd.

THE hearing of this case was concluded on the 2nd inst. It was an action brought by Mr. Frank Trew Cope, of No. 4, Northumberland-street, Strand, against Messrs. J. Lyons & Co., the well-known caterers, for an injunction to restrain the defendants obstructing his ancient lights by the erection of a large restaurant or hotel by the defendants at Charing Cross.

Mr. Frank Russell and Mr. Joseph Tanner appeared for the plaintiff, instructed by Messrs. Lotts Brothers, of 8, Bartlett's-buildings, Holborn; and Mr. Younger, K.C., and Mr. Sheldon for the defendants, instructed by Messrs. Bartlett & Gluckstein, of 199, Piccadilly.

Mr. Russell observed that the plaintiff was not asking for damages; he wanted his light.

Mr. Younger replied that the defendants denied liability, and asserted that, by their improvement, the plaintiff would have more light than before.

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His Lordship: I remember when I was in the House of Lords a model was handed in and I was never allowed to say another word. That was the way in the House of Lords. I wondered whether this model was to be like that. It looks to me as though the plaintiff's windows facing the Strand would be shut out altogether.

Mr. Younger: The plaintiff, to a large extent, has elected to live in a hole. He seems to like it.

His Lordship: But if you live in a hole where you get very little light, that surely makes the question of a further obstruction very much worse. Here is a skylight near the ground, but that is under direct light from the empyrean, and, since Colls's case, it is held you cannot have an obstruction of a skylight.

Mr. Russell said he especially complained of the loss of light to the staircase window and the office window at the bottom. They could not complain, the defendants urged, in respect of windows looking north, because they had already allowed somebody else to build a wall and to block out some of the light. But that was a mare's nest—a wall was always there. It was heightened, and by an arrangement no light was taken away at all. While the wall was raised something else was swept away.

Mr. Younger: And we are taking something away. There are the outbuildings, which are by no means low buildings, and we are taking back the general line of these buildings some 6 ft.

Mr. Russell replied that it was to give nothing if at the same time the line of the principal building was being brought further forward.

The first witness, Mr. Herbert Philip Fletcher, F.R.I.B.A., F.S.I., said that was exactly what the defendants were doing, and their new building at one point represented to the plaintiff a loss of light to be put at 15½ degrees. The witness had had wide experience of estimating property value, and he calculated the loss of letting value of the plaintiff's house at £50. Capitalised at twenty years, that was £1,000. The increase of light at a narrow slit of 8 ft. or 10 ft. did not compensate for direct light lost elsewhere. No substantial amount of direct light could come through a slit. The new building would make the plaintiff's office unusable except by artificial light.

Cross-examined, he admitted that if the defendants put back 5 ft. or 6 ft. a line representing outbuildings going up 28 ft. 9 in. (though he did not admit that measurement), there might be more diffused light, supposing the new building went no higher than 29 ft. 3 in. But this was bringing forward the main line. He understood the house was sold in 1907 for £4,000 on account of the bad light, and he knew the defendants were going to face all the buildings with white tiles. That did not alter his opinion as to diminished light and depreciated letting value.

Sir A. Brumwell Thomas, F.R.I.B.A., gave corroborative evidence. He considered, he said, the width of this court of paramount importance for the plaintiff's office and other windows. Glazed bricks would not give adequate value for what had been taken away.

Plaintiff gave evidence as to the sources of his light, and indicated the extent to which the use of his office would be prejudiced by its reduction. In a previous instance, where a building had reduced his light, compensation was forthcoming in a special increase in another direction.

On the conclusion of the plaintiff's cross-examination, Mr. Frank Russell said he thought if the Court would allow a consultation some understanding might be come to.

After a conference between Counsel, Mr. Younger announced that the model on his Lordship's desk might now be put out of sight.

Mr. Russell stated that the plaintiff would accept an agreed sum as costs of the action, and the proceedings would be stayed on the understanding that the plaintiff would be able to raise his building at any time to a height equal to the defendants'.

KING'S BENCH DIVISION.

(Before Mr. Justice LAWRENCE.)

War Office Sue Architect and Engineers: Secretary of State for War *v.* Kirkland & Capper and Another.

THIS was an action brought by the Secretary of State for War against Messrs. Kirkland & Capper, electrical engineers, of 17, Victoria-street, Westminster, and Mr. John H. T. Woodd, an architect, of Broad Sanctuary-chambers, Tothill-street, Westminster, claiming to recover damages against both the defendants in connection with their supervision of certain electrical works erected by the War Office, and entitled the New Medical Staff College and Laboratory at Millbank.

Both the defendants denied being guilty of negligence.

For the War Office the Solicitor-General, Sir Stanley Buckmaster, K.C., M.P., Mr. Gordon Hewart, K.C., M.P., and Mr. Brandon appeared; for the defendant, Mr. Woodd, Mr. M. Shearman, K.C., and Mr. Eustace Hills (instructed by Messrs. Dowson, Ainslie, & Co.); and for the defendants, Messrs. Kirkland & Capper, Mr. A. J. Walter, K.C., and Mr. G. R. Blanco White (also instructed by Messrs. Dowson, Ainslie, & Co.).

The history of the case, said the Solicitor-General, in opening, was quite simple, but something would depend upon the construction of the documents. In 1903 the War Office were engaged in constructing at Millbank this Medical College, a large and fine building, having residential quarters for the officers and a large laboratory. The defendant, Mr. Woodd, was engaged as architect at a commission of 5 per cent. on November 3, 1903, and it was his duty to superintend the whole of the works of the building, including the installation of lighting; but the contract expressly provided that the lighting-work should be placed in the hands of experts. In February, 1904, the defendants, Messrs. Kirkland & Capper, were employed by the plaintiffs through Mr. Woodd to supervise the electrical lighting of the building. The acceptance was recommended to the War Office of two tenders submitted by Messrs. John Bolding & Sons, Ltd., for the installation, the amount being £838, in respect of the residential portion of the building, and £801 for the laboratories. These were accepted by the War Office early in 1905. Messrs. Bolding & Sons, Ltd., undertook to execute the work in accordance with the current Board of Trade regulations and the wiring rules of the Institution of Electrical Engineers.

In connection with the wiring of the building for electric light, it was stipulated that lead-covered wire should only be used in cases where the wires were passed through cornices, mouldings, or walls, and the plaintiff's complaint was, that the defendants, Mr. Woodd and Messrs. Kirkland & Capper, had approved of the wiring of this place throughout with these lead-covered cables. A further ground of complaint was that the wires were hidden in plaster.

The defendants (it was alleged) took no steps to ascertain where the wires were laid that fed the lights, and the whole wiring-work was extremely unsatisfactory, and it would be contended for the War Office that the certificate for payment for the work was negligently given. The system was found to be a failure, and then it was asserted that some of the circuits had gone wrong because attempts had been made to repair them by Royal Engineers, and that this work had been clumsily and improperly done; but the plaintiff's case was, that this could not be possibly held to account for the utter failure which was found. The only remedy was to rewire throughout, and this was done by Messrs. Foote & Milne in April, 1910. These were the facts of the dispute, and Counsel would contend that there was a clear case of negligence against the defendants as supervisors.

At this stage, Mr. Walter, K.C., remarked that he denied the negligence, and proposed to show that the trouble was caused by interference with the work after it was done.

Mr. Justice Lawrence said that, without expressing any opinion of the question of damages, it might appear, when they got further, that the matter would be so detailed that some expert or referee would have to investigate the items and calculate the possible damage.

The various documents and contracts were dealt with at great length by the Solicitor-General, who pointed out that the contract with Mr. Woodd provided that he should, as an architect, superintend the building and have as remuneration a commission of 5 per cent. on the net cost of the building and works completed under his direction; and it threw on him the responsibility for the proper supervision of the execution of the work. Generally speaking, Mr. Woodd was to be responsible for the lighting, as also for the rest of the building under Clause IV.

The technicalities of electric wiring were explained in great detail by the Solicitor-General, and also the various acts which it was alleged were contrary to the contract and to which the charge of negligence related.

Mr. Woodd totally denied negligence, and he referred to the fact that the contract provided for the electric lighting to be placed in the hands of experts, and that they were to be responsible to the War Office.

On behalf of Mr. John Henry Townsend Woodd, Mr. Shearman said he could state at once that his position was that he was architect for the building, and the engineers had to do with the electric lighting. Mr. Woodd would contend that he was not responsible for the electric lighting, except so far as seeing that the electric-light works did not interfere with the proper building of the house. He was entitled to give instructions to the engineers, in so far as it assured no interference with the building. The contract provided for the employment of electrical experts, and they were so employed, and Mr. Woodd's position, briefly put, was: "They are the engineers; I am the architect."

Sir Stanley Buckmaster said that what had caused this system to fail was the putting of lead-covered conductors into plaster without proper protection, and he could not see how any of the defendants could evade

responsibility, as this was directly contrary to the terms of the contract.

The Solicitor-General added that there was negligence in permitting lead wiring to be used, and that the use of the lead wiring caused the breakdown of the system. Messrs. Kirkland & Capper had by a letter taken up the attitude that the system was introduced at the instance of Mr. Woodd, and the effect of the letter (according to Counsel) was that Mr. Woodd must bear the responsibility. Mr. Woodd denied negligence, and had declined to accept full responsibility. Counsel would contend that Mr. Woodd, as the architect, had the superintendence in general terms of the lighting, although the actual work was given to experts; but if Mr. Woodd directed the use of a system contrary to the builders' contract it was a breach of his duty as an architect.

Mr. Allan Kirk, electrical engineer, employed by the War Office, gave evidence as to examining the installation and making a Report. In his opinion the failure of the installation was due to the use of lead-covered wires buried in plaster without any protection.

Replying to Mr. Shearman, K.C., Mr. Kirk said that the plaster in the majority of places put on the top of the Frazzi blocks was deep enough to bury a five-eighth barrel pipe. He believed that substantially the floors and ceilings of all the stories were made of Frazzi blocks.

Is it your view that the Frazzi blocks had very little to do with this wiring? Will you contradict this fact that, on the ground floor alone of the laboratory, there are 202 pendant lights that all come through Frazzi blocks?—I do not contradict it. It is quite immaterial. You have the upper surface of your floor to cut, and you need not touch it.

Counsel: We will leave the Judge to deal with that. I take it from the evidence you have given that you have entirely neglected the composition of the floors and ceilings?

Witness: Yes.

Mr. William Henry Patchell, electrical engineer, gave evidence to the effect that to use these lead-covered wires buried in plaster was dangerous. It was bad practice altogether, and was very seldom done. He knew that in this building a good many Frazzi blocks were used, and he did not agree that, where Frazzi blocks were used, it was impracticable or very difficult to use wires in conduit. In this building he saw places where there was depth enough to put the conduit in the plaster.

In the plaster over the Frazzi blocks?—Yes, without cutting them. There was depth enough of plaster to bury the conduit.

He agreed with the evidence of Mr. Kirk that these blocks could be cased over after they had been built in.

When the case was further continued, Mr. Walter asked the witness if these methods of doing work were contemplated in a specification, would he, as a consulting engineer, consider that he was the person to select as to which one was to be chosen at this particular place, and witness replied: "If the specification is drawn that way, certainly."

Other expert electrical engineers were called to give similar evidence for the case for the War Office.

Opening the case for the defendant, Mr. Woodd, Mr. Shearman, K.C., said he would submit that there was no case at all against Mr. Woodd, and that, in view of the contractual relations between the parties, there was no evidence of neglect by Mr. Woodd as an architect, and negligence was the only case that was suggested here against Mr. Woodd. Counsel said the action was originally launched by the War Office against Messrs. Kirkland & Capper, the engineers, and they added Mr. Woodd as a defendant as soon as they found that he would not give evidence against the engineers.

Dealing with the precise terms of the War Office contract with Mr. Woodd, Mr. Shearman emphasised the point that the electrical work was to be placed in the hands of "responsible experts." It was said in the amended statement of claim that Messrs. Kirkland & Capper were employed by the War Office through the defendant, Mr. Woodd. Counsel could not understand the meaning of these words at all. The agreement between the parties, broadly, was this: that Mr. Woodd was to be responsible as architect for the building, and Messrs. Kirkland & Capper were engineers responsible for the engineering work.

"The thread of the case against us," declared Mr. Shearman, "is so covered up in plaster that it is difficult to discover where it runs."

He submitted that it was not Mr. Woodd's duty at all to supervise the electrical engineering work. He was responsible for the supervision of the architectural work. Mr. Woodd was an eminent architect, whose speciality was work for hospitals. He had done a great deal of work for Guy's Hospital, and this lead-covered system buried in plaster had been installed there, and he was told that there were 30 miles of wires there, and the system was fully satisfactory. Mr. Woodd's view here was that, where there was a large contract of this kind—the War Office contract for the college, &c., ran up to about £90,000—and it came to engineering work, the contract should provide for that engineering work to be supervised by an engineer. It was not Mr. Woodd's business to be an electrician or a boiler-maker.

Other points made by Mr. Shearman, in a lengthy speech, were that Mr. Woodd did nothing in regard to the certifying for the electric-light work, because it was not his business. Messrs. Kirkland & Capper were paid a commission of 5 per cent., to include their certifying—the contract between the War Office and Messrs. Bolding said that the persons to certify should be Messrs. Kirkland & Capper. Mr. Woodd was doing the architect's work under this £100,000 contract on the 5 per cent. basis, and he was not to be paid any percentage on the electric light. He was to be responsible as architect, with the knowledge that independent experts were supervising the engineering. Even if the way the system was installed was a breach of contract terms, Mr. Woodd could not know this unless Mr. Kirkland had said to him: "I can't do this because it is a breach of my contract." Mr. Woodd was perfectly entitled to say that he would be satisfied if a system that he had installed elsewhere and found to be satisfactory was used, as it appeared to him to be the most suitable, having regard to the fact that he could not have the blocks chipped, as they were already in position. If there was anything wrong here at all, it was due to lack of careful workmanship—upon the documents no charge of professional negligence against Mr. Woodd could be maintained.

Mr. Shearman later said that the attempt here was to put on Mr. Woodd work for which he was not paid, and to blame him for not supervising a contract when there was no power in the contract given to him to supervise.

At the end of his speech, Mr. Shearman submitted formally that there was no case in law against Mr. Woodd.

A similar submission was at once made for Messrs. Kirkland & Capper by Mr. Walter, K.C. Counsel pointed out that his clients were engaged solely as consulting engineers; their duties were perfectly clear, and they understood they were employed for the purpose of consultation and not for superintendence; it was no part of their business to see that the workmen employed by the contractors were doing their work properly.

Mr. Woodd eventually gave evidence.

Owing to the illness of the Judge, the further hearing of the case was adjourned until the 21st inst.

A Charge of Bribery.

At the Clerkenwell Police-court on Monday last week, Mr. Ernest Cheeseman, of Sandwich-street, Russell-square, was summoned for, on November 19 and 24, as an agent for Messrs. Wallis & Sons, of Maidstone, obtaining of Mr. Frederick Giles a postal-order for 3s., contrary to the Prevention of Corruption Act, 1906, sect. 1 (1).

Mr. Clem. Edwards, M.P., appeared for the prosecution, and Mr. Drake for the defendant.

Mr. Frederick Giles, a plasterer, said that on October 30 he applied for a job at work being carried out by Messrs. Wallis's. He saw the foreman plasterer, Mr. Cheeseman, and he said "No" to his application. After repeated applications, Mr. Giles saw Mr. Cheeseman on November 5, and Mr. Cheeseman said he had a good, lasting job for a number of men. The prospects were discussed, and Mr. Cheeseman said it was shocking to watch the wife bootless and the children starving, a proposition to which claimant acceded, being himself a married man with a wife and four children. Mr. Cheeseman asked him whether he would give him some financial assistance at the week-ends if he put him on the job. Complainant agreed to accept the job on such terms, saying, "Just so." Witness was allowed to start at once, beginning the following morning. Defendant said, "You look after me and I'll look after you." Witness told a mate what had transpired, and started work on November 6. On Saturday, November 8, defendant said that, being a short week, he didn't expect anything that week, but he was not to forget the following week. On November 19 Mr. Cheeseman said to him: "I haven't heard from you this week." Witness said he did not like the idea of money transactions being seen between them on the job; he didn't want to get into any bother. Defendant said: "Neither do I," and witness suggested sending a postal-order. Defendant supplied him with his address, and witness sent an order for 3s. that afternoon. Defendant told him he would give him a job as long as he could. On November 24 defendant complained that he had not heard again, and witness said he "ought to have done," and should do later on. That day—Monday, November 24—witness sent the second postal-order. On the 26th there was a stoppage of work in connection with a strike.

Cross-examined, witness had been out of work a week before seeing Mr. Cheeseman. He was a trade unionist. Mr. Cheeseman did not ask about that. Witness's mate did not get a job with Mr. Cheeseman. The union had made attacks on Mr. Cheeseman. He employed non-unionists as well as unionists. Witness did not try, with his mate, to get the men to join the union. The mate did; it was his duty as "ticket steward." There was trouble through Mr. Cheeseman employing the non-unionists. The officials of the society sent witness to the job, on the chance that he would get it.

Mr. Drake said the story would be denied. Mr. Cheeseman received postal-orders without any knowledge of where they came from, and took them to be from some of the men to whom he had lent money.

Witness (continuing) said he had had the address to send flowers to the defendant—he was interested in flower-growing. He sent a note of his name and address, and number on the job alone with the past postal-order. He sent the first postal-order without any explanation.

Re-examined: When he first went for the job he had no instructions from the union. He only communicated with the officials after the suggested payment. He was told to go to work and see whether Mr. Cheeseman asked him for the money. If it was asked for, it was to be paid by postal-order. This time there had been no conflict between the society and Mr. Cheeseman. He never sent the flowers to the foreman; he never promised to do so.

Mr. Cheeseman (in the witness-box) said he had been "all his life—or the greater portion of it—with the firm of Messrs. Wallis's, of Maidstone. He had been foreman plasterer for seven years. The job in question was on the offices of the National Union of Teachers, Russell-square. He started Mr. Giles in the usual way, without any stipulations. There was no foundation for the suggestions made. The paper with the address on was given to Mr. Giles for the purpose of sending some flowers. Witness loved flowers, and Mr. Giles said he could send him some prize ones. He had the postal-orders without any covering letter. At that time there was trouble with the Plasterers' Union, resulting in a strike.

Cross-examined: During the week many of the men drew 1s. or 2s. from him, and he didn't always make a note of it. Several had 3s. Mr. Giles had been speaking falsely that day. There was no truth in his statement.

By the Magistrate: He thought it possible that someone who had left the job had sent the orders. He kept them some time before changing them.

Mr. John Alfred Wallis, director of Messrs. Wallis & Son, Maidstone, spoke of the integrity of the defendant. He was a first-rate, straightforward, honest man.

Cross-examined: "Subbing" was the usual thing in the trade. Foremen would make advances out of their own pockets.

Mr. d'Eyncourt said he must take time to consider his decision, and adjourned the summons.

PATENTS.

APPLICATIONS PUBLISHED.*

6,233 of 1913.—James Keith and David Balfour Bain: Tubular apparatus for heating or cooling air for ventilating or the like.

6,381 of 1913.—Friedrich Haag: Tile.

12,492 of 1913.—George Augustus Birchley and Arthur Harvey: Door silencer.

13,471 of 1913.—John Reginald Brown: Casement stays.

13,818 of 1913.—Charles Pierre Durand: Hooks for securing roofing tiles.

14,025 of 1913.—Walter Burrows, Albert Parker, and Henry Byles: Fence for four-cutter moulding machine for wood and the like.

16,369 of 1913.—Louis Rasch: Chimney and flue tops.

16,636 of 1913.—Marcellin Jules Langlois and Georges Henri Langlois: Cements or agglomerates for constructional purposes.

17,797 of 1913.—Edward Bignell: Sinking of piles, caissons, and the like.

17,820 of 1913.—George Donald Innes: Frame for supporting a lavatory basin or the like.

24,245 of 1913.—James Grieve Lorrain (the Corrugated Bar Company): Expanded metal.

25,118 of 1913.—Joseph Southall: Concrete-mixing machines.

28,027 of 1913.—Carlo Bonzanigo: Sluice gates and the like.

28,942 of 1913.—Karl Jahn: Hot-water installations.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

List of Competitions, Contracts, etc.

For some contracts still open, but not included in this List, see previous issues. **Those with an asterisk (*) are advertised in this number:** Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xxi.; Auction Sales, xxvi. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

Competitions.

MAY 1.—**Glasgow.**—SYMBOLICAL SCULPTURE.—The Glasgow Corporation invite sculptors to submit competitive models for four groups of symbolical sculpture. See advertisement in issue of March 6.

MAY 4.—**London.**—ST. PAUL'S BRIDGE.—The Bridge House Estates Committee of the Corporation of London invite designs from British architects for the architectural treatment of St. Paul's Bridge. Premiums, £300, £200, and £100 respectively. The assessor is Sir William Emerson, P.P.R.I.B.A. See advertisement in issue of December 12.

MAY 15.—**Home Counties.**—LABOURERS' COTTAGES.—The proprietors of *Concrete and Constructional Engineering* invite designs for labourers' cottages. Premiums 100 guineas, 60 guineas, and 25 guineas respectively, and two at 10 guineas each. See advertisement in issue of March 27.

JUNE 2.—**Grimsby.**—CLUB.—The Committee of the New Constitutional Club invite designs for new premises to be erected at a cost of £3,000, exclusive of fees and furnishing. Premiums of £40 (which will merge with the architect's commission), £20, and £10 respectively. Particulars of Mr. H. W. V. Skeckell, secretary, Constitutional Club, Victoria-street, Grimsby. Deposit, £2.

JUNE 20.—**Orillia.**—MONUMENT.—The Executive Committee of the Champlain Tercentenary Committee invite competitive designs for a monument to Samuel de Champlain. Not to cost more than £4,100. See advertisement in issue of February 13.

* JUNE 23.—**Sunderland.**—SCHOOL.—The Sunderland B.C. invite competitive designs for a proposed secondary school. Premiums £100, £50, and £25 respectively.

JANUARY 15, 1915.—COLLEGE MEMORIAL LECTURE HALL.—Designs for the Alexander Thompson Travelling Studentship must be delivered by the above date.

Contracts.

BUILDING AND PAINTING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

APRIL 20. — **Dublin.** — ADDITION. — Building addition to the Carmelite Priory, Aungier-street, Dublin, for the Very Rev. J. L. M'Cabe. Architect, Mr. C. B. Powell, 107, Rathmines. Quantities of Mr. M. J. Cullen, surveyor, 21, Rathdown-road, Dublin.

APRIL 20. — **Kingston-on-Thames.** — BRIDGE WIDENING.—Execution of certain bridge widening works in the county, mainly brickwork construction with a small amount of steel and iron, for the Surrey C.C. Names to Mr. A. Dryland, M.Inst.C.E., County Surveyor, County Hall, Kingston-on-Thames.

APRIL 20.—**Wadebridge.**—IMPROVEMENT.—For taking down Bridge End House, widening of the main, the erection of retaining wall, and completing improvement. Specifications of Mr. E. W. Burr, Council's Surveyor, at the Town Hall.

APRIL 21.—**Blaina.**—ALTERATIONS.—For extensive alterations and additions to Blaina and District Cottage Hospital, near Nantyglo. Quantities of Mr. E. A. Johnson, F.R.I.B.A., architect, Abergavenny. Deposit, £3 3s.

APRIL 21. — **Bridlington.**—HOUSES.—Erection of four houses, St. John's-street, for Mr. F. W. Lendis. Mr. J. R. Earnshaw, architect, Carlton House, Bridlington.

APRIL 21.—**Hythe.**—CHURCH.—Erection of new Congregational Church at Hythe. Quantities from Mr. C. H. Brightiff, 3, Portland-terrace, Southampton. Deposit, £1 1s.

APRIL 21.—**Lancaster.**—PAINTING.—For decorating interior of St. Nicholas-street Chapel. Mr. W. G. Armistead, 40, Golgotha-road, Lancaster.

* APRIL 21. — **Willesden.** — BANDSTAND. — The Willesden U.D.C. invite tenders for supply and erection of a rustic bandstand.

APRIL 22.—**Bury.**—FOUNDATIONS.—Construction of concrete foundations to generator at Chamber Hall, Bury, for the Corporation. Quantities of the Borough Engineer, Bank-street, Bury.

APRIL 22.—**Edinburgh.**—PAINTING, ETC.—For (1) Laying out of grounds, boundary walls, and fences; (2) wrought-iron railings and gates, and (3) painter work, at the Portobello Town Hall, for the Edinburgh Corporation. Specifications, etc., of the architect, Mr. James A. Williamson, A.R.I.B.A., Public Works Office, City-chambers.

APRIL 22.—**Hammersmith.**—RAILINGS, ETC.—Provision, erection, and painting complete of aproximately 1,270 ft. run of iron railing 4 ft. high, to enclose the St. Peter's-square open space within the borough, and also for the execution of certain repair works to the Dwarf boundary wall. Specification of Mr. H. Mair, M.Inst.C.E., Borough Surveyor, Town Hall, Hammersmith.

APRIL 22.—**Leicester.**—EXTENSION.—Extension of the "Lero" Generating Station and for other works in connection therewith for the Corporation. Quantities of Mr. E. George Mawbey, M.Inst.C.E., Borough Engineer, Town Hall, Leicester. Deposit, £2.

APRIL 22.—**Morechard Bishop.**—CATTLE HOUSE, —Erection of cattle house at Brownstone Farm, Morechard Bishop, for Mr. C. Comyns Tuckers. Tenders to Mr. Tuckers at Beech Hill, Morechard Bishop.

APRIL 22. — **Twickenham.** — DEMOLITION. — Demolition of premises known as Cole's-buildings. Form of tender from Messrs. Daniel Smith, Son, & Oakley, 4-5, Charles-street, St. James's-square, S.W.

APRIL 22.—**Wareham.**—COTTAGES.—Erection of six cottages in the parish of Langton Matravers for the Wareham and Purbeck R.D.C. Quantities of Mr. W. Watts Pookes, North-street, Wareham. Deposit, 10s. 6d.

APRIL 23.—**Blackrock.**—POWER STATION.—Erection of buildings and engines foundations for the U.D.C., Blackrock. Specifications from Mr. J. P. Tierney, consulting engineer, 15, College-green, Dublin. Deposit, £1 1s.

APRIL 23.—**Halifax.**—MILL.—Pulling down of old mill and building a five-story fireproof mill at Ripponden, for the Stones Mill Company, Ltd. Quantities of Messrs. Clement Williams & Sons, architects, Post Office-buildings, Commercial-street, Halifax.

APRIL 23.—**North Walsham.**—ALTERATIONS.—Alterations to two houses in Norwich-road, North Walsham, to adapt same for use as a children's home, for the Smallburgh Guardians. Specifications of Mr. Fairfax Davies, Clerk, North Walsham.

APRIL 23. — **Nottingham.** — DEMOLITION. — Taking down, removing, and, where necessary, shoring up and making good to adjoining properties, houses in Silverwood-place, Bellar-gate; Princess-street; Woolpack-lane; Star-court, St. James's-street; Earnshaw's-yard, London-road; and Thoroughfare-yard, St. James's-street. Mr. W. J. Board, Town Clerk, Guildhall, Nottingham.

APRIL 23.—**Truro.**—ALTERATIONS.—For extensive additions and alterations at Trevaunance Cove, St. Agnes, for Mr. H. Hemingway, London. Specifications of Mr. A. Ernest Harris, architect, Truro.

APRIL 24.—**Dublin.**—ADDITIONS.—For the erection of new buildings at the rear of the Technical School, 18, Rutland-square, Dublin, in accordance with plans, etc., to be seen at the office of the City Architect, Municipal Buildings, Cork-hill, Dublin. Quantities at the office of the City Treasurer, Municipal Buildings, Cork-hill, Dublin. Deposit, £2.

APRIL 25.—**Dodworth.**—OFFICES.—Erection of Council offices, etc., in High-street, Dodworth, for the Dodworth U.D.C. Quantities of Mr. Ernest W. Dyson, architect and surveyor, 10, Regent-street, Barnsley.

APRIL 25.—**Eccles.**—OFFICE.—Erection of an office building in Irwell-place, Eccles, for the Corporation. Quantities of the Borough Surveyor, Town Hall, Eccles. Deposit, £2.

APRIL 25.—**Great Yarmouth.**—ALTERATIONS.—Alterations to the lavatories in the male and female lunatic wards of the Great Yarmouth Workhouse. Specifications of Mr. Frank Burton, Clerk to the Guardians, Guardians' Office, 11, Queen-street, Great Yarmouth.

APRIL 25.—**Hollybush.**—HOUSES.—Erection of twelve houses adjoining new siding recently put in near Markham's Colliery, Hollybush, for the Abernant Building Syndicate. Specifications of Mr. R. Simmons, architect, Blackwood.

APRIL 25.—**Hollywood.**—HOUSE.—Erection of house at Slievecorragh, Hollywood. Specification of Mr. M. Nugent, Slievecorragh, Hollywood, Co. Wicklow.

APRIL 25.—**Pontypridd.**—HOUSES.—Erection of thirty-six houses at Cilfynydd for the Albion Colliery Company, Ltd. Specification of Messrs. Arthur Ll. Thomas & Gomer S. Morgan, engineers and architects, Pontypridd.

APRIL 26. — **Batley.** — JOINERS' WORK. — For joiner work in connection with the Batley Agricultural Show. Specification of Mr. W. C. Schofield, White Lee-road, Batley.

APRIL 27.—**Bury St. Edmund's.**—PAINTING.—For painting and decorating, etc., to the following police-stations:—Boxford, Hadleigh, Sudbury. Mr. A. Ainsworth Hunt, M.S.A., Licentiate R.I.B.A., County Architect, Bank-chambers, Bury St. Edmund's.

APRIL 27. — **Carlow.** — HOUSES.—Erection of fifty-three artisans' dwellings on five different sites, in accordance with plans and specifications prepared by Mr. Peter P. Carbery, C.E., Town Surveyor. Quantities of Mr. William A. Lawler, Town Clerk, Town Hall, Carlow.

APRIL 27. — **Cork.**—ALTERATIONS.—For alterations at Cork Post Office. Quantities from Mr. H. Williams, Office of Public Works, Dublin.

APRIL 27.—**Dundee.**—SHED.—Erection of corrugated-iron shed at Stobsmuir Pipe Yard for the Dundee Corporation. Quantities of Mr. G. Baxter, engineer, 93, Commercial-street, Dundee.

APRIL 27.—**Mexborough.**—BATHS.—Erection of Public Baths for the U.D.C. Quantities of Mr. H. R. Collins, Regent-street, Barnsley Deposit; £2 2s.

* APRIL 28.—**Attercliffe.**—LABOUR EXCHANGE. —The Commissioners of H.M. Works, etc., invite tenders for erection of Attercliffe and Brightside Labour Exchange.

APRIL 28. — **Truro.**—BRIDGE.—Erection of a stone bridge at Nansough Mill, in the parish of Ladock, for the Truro R.D.C.. Mr. Coulter Hancock, 12, Princes-street, Truro.

* APRIL 30. — **Islington.** — STRENGTHENING FLOORS.—The Guardians of St. Mary, Islington, invite tenders for the above work.

MAY 1.—**Preston.**—SCHOOL.—Erection of an elementary school for 300 children at Cadishead, near Manchester, for the Lancashire Education Committee. Quantities of the County Architect, Mr. Henry Littler, 16, Ribbledale-place, Preston. Deposit, £2.

* MAY 7.—**St. Albans.**—SCHOOL.—The Hertfordshire C.C. invite tenders for the erection of a new school.

MAY 8. — **Dunbell.** — SCHOOL. — Erection of a new National school at Dunbell, Co. Kilkenny, and a new National school at Castlewarren, Co. Kilkenny. Mr. J. Cahill, P.P., Clifden Villa, Kilkenny.

* MAY 11.—**Guildford.**—COTTAGES.—The Guildford T.C. invite tenders for erection of twenty cottages.

* MAY 11.—**Ilkley.**—GENERATING STATION.—The Ilkley U.D.C. invite tenders for the erection of the above building in steel framing with brickwork and reinforced concrete fittings.

* MAY 13. — **Barnet.** — HOME. — The Barnet Guardians invite tenders for erection of a home for infants.

* MAY 18.—**Kent.**—SCHOOL ENLARGEMENT.—The Kent E.C. invite tenders for the enlargement of the Council's school at Minster-in-Sheppey Halfway House.

NO DATE.—**Banksfield.**—EXTENSIONS.—Extensions at Banksfield Dyeworks. Quantities, etc., of Messrs. Scott & Rhodes, Yeadon.

NO DATE.—**Blaengarw.**—COTTAGES, ETC.—For the erection of twenty cottages and for making the necessary roadways for same at Blaengarw, for the International Coal Company, Ltd. Specifications of the Manager, Mr. W. J. Morgan, International Colliery Offices, Blaengarw, Glam.

NO DATE. — **Carlisle.** — SCHOOL.—Erection of infants' school and caretaker's house at Newtown, for the Carlisle Education Committee. Quantities of the architects, Messrs. Oliver & Dodgshun, Lowther-street, Carlisle.

NO DATE.—**Dublin.**—ALTERATIONS, ETC.—Alterations, including building, plumbing, and painting works, to be carried out at Linen Hall-buildings, Dublin, in connection with the forthcoming "Civic Exhibition." Specifications of Mr. Geo. L. O'Connor, C.E., F.R.I.A.I., architect, Mansion House-chambers, 27, Dawson-street, Dublin.

NO DATE.—**Griffithstown.**—THEATRE.—Erection of an electric theatre at Griffithstown for the Griffithstown Palace Company, Ltd. Specifications of Mr. George Kenshole, M.S.A., Bargoed.

NO DATE.—**Llanelly.**—CHIMNEY.—Additions to brick chimney. Particulars of Glyncoed Collieries, Ltd., Llanelly.

[Those with an asterisk (*) are advertised in this issue.]

ENGINEERING, IRON, AND STEEL.

ROAD, SANITARY, AND WATER WORKS.

Public Appointments.

Auction Sales.

TO CORRESPONDENTS.

[There will be several Open columns omitted in this issue.]

PRICES CURRENT OF MATERIALS.

. Our aim in this list is to give, as far as possible, the average prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River.	£	s.	d.
Best Stocks	1	16	6
Picked Stocks for Facings	2	10	0

Per 1000, Delivered at Railway Depôt.

	£	s.	d.		£	s.	d.
Fletton	1	14	0	Best Blue Pressed Staffordshire	3	15	0
Best Fareham Red	3	12	0	Do. Bullnose	4	0	0
Best Red Pressed Ruabon Facing	5	0	0	Best Stourbridge Fire Bricks	4	0	0

GLAZED BRICKS—

	£	s.	d.		£	s.	d.
Best White, Ivory, and Salt Glazed Stretchers	12	7	6	Double Headers	14	17	6
Headers	11	17	6	One Side and two Ends	18	17	6
Quoins, Bullnose and 4½ in.				Two Sides and one End	19	17	6
Flats	15	17	6	Splays and Squints	17	7	6
Dble Str'tch'rs	17	17	6				

Second Quality £1 10s. per 1000 less than best.

	s.	d.	
Thames and Pit Sand	7	0	per yard, delivered.
Thames Ballast	5	9	,,
Best Portland Cement	37	0	per ton, ,,
Best Ground Blue Lias Lime	20	0	,,

NOTE—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 14s. 0d. per yard delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

Per Ft. Cube.

	s.	d.
BATH STONE—delivered on road waggons, Paddington Depôt	1	7½
Do. do. delivered on road waggons, Nine Elms Depôt	1	9½

PORTLAND STONE (20 ft. average)—

	s.	d.
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	4½
White Basebed, delivered on road waggons Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	6½

Per Ft. Cube, delivered at Railway Depôt.

	s.	d.		s.	d.
Ancaster in blocks	1	10	Closeburn Red Freestone	2	0
Bar in blocks	1	6	Red Mansfield Freestone	2	4
Greenhill in blocks	1	10	Talacre & Gwespyr Stone	2	4
Derby Dale in blocks	2	4			
Red Corsehill in blocks	2	8			

YORK STONE—*Robin Hood Quality.*

Per Ft. Cube, Delivered at Railway Depôt.	s.	d.
Coupled random blocks	2	10

Per Ft. Super., Delivered at Railway Depôt.

	s.	d.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8
6 in. rubbed two sides ditto, ditto	2	6
3 in. sawn two sides slabs (random sizes)	0	11½
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7
1½ in. to 2 in. ditto, ditto	0	6

RAG YORK—

Per Ft. Cube, Delivered at Railway Depôt.	s.	d.
Coupled random blocks	3	0

Per Ft. Super., Delivered at Railway Depôt.

	s.	d.
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2	8
6 in. rubbed two sides ditto	3	0
3 in. sawn two sides slabs (random sizes)	1	2
2 in. all-faced random flags	0	5

SLATES.

Per 1000 of 1200 at Railway Depôt.

In. In.	£	s.	d.	In. In.	£	s.	d.
20 x 10 best blue Ranger	13	2	6	20 x 10 best Eureka unfading green	15	17	6
20 x 12 ditto	13	17	6	20 x 12 ditto	18	7	6
20 x 10 1st quality	13	0	0	18 x 10 ditto	13	5	0
20 x 12 ditto	13	15	0	16 x 8 ditto	10	5	0
16 x 8 ditto	7	5	0	20 x 10 permanent green	11	12	6
22 x 10 best blue Portmadoc	12	12	6	18 x 10 ditto	9	12	6
16 x 8 ditto	6	12	6	16 x 8 ditto	6	12	6

TILES.

At Railway Depôt.

	s.	d.		s.	d.
Best plain red roofing (per 1000)	42	0	Best "Hartshill" sandfaced (per 1000)	45	0
Hip and Valley (per doz.)	3	7	Do. pressed (per 1000)	42	6
Best Bromsley (per 1000)	50	0	Do. Ornamental (per 1000)	47	6
Do. Ornamental (per 1000)	52	6	Hip (per doz.)	4	0
Hip and Valley (per doz.)	4	0	Valley (per doz)	3	6
Best Ruabon red, brown, or brindle (Hip doz)			Staffords. (Hanley Reds or Brindled (per 1000)	42	6
Do. Ornamental (per 1000)	57	6	Hand-made sandfaced (per 1000)	45	0
Hip (per doz.)	4	0	Hip (per doz.)	4	0
Valley (per doz.)	3	0	Valley (per doz)	3	6

WOOD.

BUILDING WOOD.	At per standard.					
	£	s.	d.		£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	15	0	0	..	16	10	0
Deals: best 3 in. by 9 in.	15	0	0	..	16	0	0
Battens: best 2½ in. by 7 in. and 3 in., and 3 in. by 7 in. and 3 in.	12	10	0	..	13	10	0
Battens: best 2½ by 6 and 3 by 6	0	10	0		less than 7 in. and 3 in.		
Deals: seconds	1	0	0		less than best		
Battens: seconds	0	10	0	,,		,,	
2 in. by 4 in. and 2 in. by 6 in.	11	10	0	..	12	10	0
2 in. by 4½ in. and 2 in. by 5 in.	10	10	0	..	11	10	0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0	10	0		more than battens.		
¾ in.	1	0	0		,,		
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft.						
	5	0	0	..	6	5	0
Seconds	4	10	0	..	5	0	0
Small timber (6 in. to 10 in.)	3	17	6	..	4	0	0
Small timber (6 in. to 8 in.)	3	5	0	..	3	10	0
Swedish balks	2	12	6	..	3	0	0
Pitch-pine timber (30 ft. average)	6	0	0	..	7	0	0

JOINERS' WOOD.	At per standard.					
	£	s.	d.		£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	26	0	0	..	27	0	0
3 in. by 9 in.	24	0	0	..	25	0	0
Battens, 2½ in. and 3 in. by 7 in.	18	10	0	..	19	10	0
Second yellow deals, 3 in. by 11 in.	21	10	0	..	22	10	0
Do. 3 in. by 9 in.	20	0	0	..	21	0	0
Battens, 2½ in. and 3 in. by 7 in.	15	0	0	..	16	0	0
Third yellow deals, 3 in. by 11 in. and 9 in.	16	0	0	..	17	0	0
Battens, 2½ in. and 3 in. by 7 in.	14	0	0	..	15	0	0
Petersburg: first yellow deals, 3 in. by 11 in.	23	0	0	..	24	0	0
Do. 3 in. by 9 in.	20	0	0	..	21	0	0
Battens	15	0	0	..	16	0	0
Second yellow deals, 3 in. by 11 in.	17	10	0	..	18	10	0
Do. 3 in. by 9 in.	16	0	0	..	17	0	0
Battens	12	10	0	..	13	10	0
Third yellow deals, 3 in. by 11 in.	14	0	0	..	15	0	0
Do. 3 in. by 9 in.	13	10	0	..	14	10	0
Battens	11	10	0	..	12	10	0
White Sea and Petersburg— First white deals, 3 in. by 11 in.	16	10	0	..	17	10	0
First white deals, 3 in. by 9 in.	14	10	0	..	15	10	0
Battens	13	0	0	..	13	10	0
Second white deals, 3 in. by 11 in.	14	10	0	..	15	10	0
Second white deals, 3 in. by 9 in.	13	0	0	..	14	0	0
Battens	12	0	0	..	12	10	0
Pitch-pine: deals	25	0	0	..	26	10	0
Under 2 in. thick extra	0	10	0	..	1	0	0
Columbian or Oregon Pine, best quality	23	10	0	..	26	0	0
Yellow Pine — First, regular sizes	50	0	0		upwards.		
Oddments	35	0	0		,,		
Seconds, regular sizes	36	0	0		,,		
Oddments	31	0	0		,,		
Kauri Pine—Planks per ft. cube	0	5	6	..	0	6	6
Dantzig and Stettin Oak Logs— Large, per ft. cube	0	3	0	..	0	3	9
Small ,, ,,	0	2	6	..	0	3	0
Wainscot Oak Logs, per ft. cube	0	7	6	..	0	9	0
Dry Wainscot Oak, per ft. super. as inch	0	0	10	..	0	1	2
¾ in. do. do.	0	0	9	..	0	1	0
Dry Mahogany — Honduras, Tabasco, per ft. super. as inch	0	0	10	..	0	1	3
Selected, Figury, per ft. super. as inch	0	1	6	..	0	2	6
Cuba Mahogany	0	1	4	..	0	2	6
					upwards.		
Dry Walnut, American, per ft. super. as inch	0	0	10	..	0	1	2
French "Italian" Walnut	0	0	10	..	0	1	4
Teak, per load (Rangoon or Moulmein)	20	10	0	..	26	0	0
Do., do. (Java)	19	0	0	..	22	10	0
American Whitewood planks, per ft. cube	0	5	6	..	0	6	6

Prepared Flooring, etc.—	Per square.					
	£	s.	d.		£	s.	d.
1 in. by 7 in. yellow, planed and shot	0	14	6	..	0	18	0
1 in. by 7 in. yellow, planed and matched	0	14	9	..	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	17	6	..	1	3	0
1 in. by 7 in. white, planed and shot	0	14	0	..	0	16	0
1 in. by 7 in. white, planed and matched	0	14	3	..	0	16	6
1¼ in. by 7 in. white, planed and matched	0	16	6	..	0	8	6
¾ in. by 7 in. yellow, matched and beaded or V-jointed boards	0	12	6	..	0	15	0
1 in. by 7 in. ,, ,,	0	15	0	..	0	18	6
¾ in. by 7 in. white ,, ,,	0	12	0	..	0	14	0
1 in. by 7 in. ,, ,,	0	14	6	..	0	16	6

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London or delivered Railway Vans, per ton.					
	£	s.	d.		£	s.	d.
Rolled Steel Joists, ordinary sections	9	0	0	..	10	0	0
Compound Girders, ordinary sections	11	0	0	..	12	0	0
Steel Compound Stanchions	12	0	0	..	13	0	0

JOISTS, GIRDERS, &c. (*continued*).

	In London or delivered Railway Vans, per ton.					
	£	s.	d.		£	s.	d.
Angles, Tees, and Channels, ordinary sections	11	0	0	..	12	0	0
Flitch Plates	11	0	0	..	12	0	0
Cast Iron Columns & Stanchions, including ordinary patterns	8	10	0		9	0	0

METALS.

	Per ton, in London.					
IRON—	£	s.	d.		£	s.	d.
Common Bars	9	0	0	..	9	10	0
Staffordshire Crown Bars, good merchant quality	9	5	0	..	9	15	0
Staffordshire "Marked Bars" *	11	0	0	..	—		
Mild Steel Bars	9	5	0	..	9	15	0
Hoop Iron, basis price	10	0	0	..	—		
,, ,, Galvanised	17	10	0	..	—		

* And upwards, according to size and gauge.

Sheet Iron Black—						
Ordinary sizes to 20 g.	10	5	0	..	—	
,, ,, 24 g.	11	5	0	..	—	
,, ,, 26 g.	12	15	0	..	—	
Sheet Iron, Galvanised, flat, ordinary quality—						
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	10	0	..	—	
Ordinary sizes to 22 g. and 24 g.	16	0	0	..	—	
Ordinary sizes to 26 g.	17	0	0	..	—	
Sheet Iron, Galvanised, flat, best quality—						
Ordinary sizes to 20 g.	18	10	0	..	—	
,, ,, 22 g. and 24 g.	19	0	0	..	—	
Ordinary sizes to 26 g.	20	10	0	..	—	
Galvanised Corrugated Sheets—						
Ordinary sizes, 6 ft. to 8 ft. 20 g.	15	0	0	..	—	
Ordinary sizes, 22 g. and 24 g.	15	5	0	..	—	
Ordinary sizes, 26 g.	16	15	0	..	—	
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	10	0	..	—	
Best Soft Steel Sheets, 22 g. & 24 g.	13	10	0	..	—	
Best Soft Steel Sheets, 26 g.	15	10	0	..	—	
Cut Nails, 3 in. to 6 in.	11	0	0	..	11	10	0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Delivered in London.					
LEAD—Sheet, English, 4 lb. and up	£	s.	d.		—	
	21	10	0	..	—	
Pipe in coils	22	0	0	..	—	
Soil pipe	25	0	0	..	—	
Compo pipe	25	0	0	..	—	
ZINC—Sheet—	In casks of 10 cwt.					
Vieille Montagne	28	5	0	..	—	
Silesian	28	10	0	..	—	

Zinc, in bundles, 1s. per cwt. extra.

COPPER—						
Strong Sheet per lb.	0	1	1	..	—	
Thin ,, ,,	0	1	2	..	—	
Copper nails ,,	0	1	0	..	—	
Copper wire ,,	0	1	0	..	—	
BRASS—						
Strong Sheet ,,	0	1	0	..	—	
Thin ,,	0	1	1	..	—	
TIN—English Ingots ,,	0	1	10	..		
SOLDER—Plumbers' ,,	0	0	10	..	—	
Tinmen's ,,	0	1	1	..	—	
Blowpipe ,,	0	1	3	..	—	

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*

Per Ft. Delivered.

15 oz. thirds	2¼d.	26 oz. fourths	3¾d.		
,, fourths	2d.	32 oz. thirds	5½d.		
21 oz. thirds	3¼d.	,, fourths	4½d.		
,, fourths	3d.	Fluted Sheet, 15 oz.	3½d.		
26 oz. thirds	4¼d.	,, 21 oz.	4s.		

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*

Per Ft. Delivered.

¼ Rolled plate	2¼d.
⅛ Rough rolled and rough cast plate	2¼d.
⅛ Rough rolled and rough cast plate	3d.
Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white	3¼d.
Ditto, tinted	5d.

* Not less than two crates.

OILS, &c.

		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	2	3
,, ,, ,, in barrels	,,	0	2	4
,, ,, ,, in drums	,,	0	2	6
Boiled ,, ,, in barrels	,,	0	2	6
,, ,, ,, in drums	,,	0	2	9
Turpentine in barrels	,,	0	2	9
,, in drums	,,	0	2	11
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		29	15	0
Red Lead, Dry	per ton	28	0	0
Best Linseed Oil Putty	per cwt.	0	9	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.

	Per gallon.		
	£	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	9
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	6
Extra Pale French Oil	1	1	0
Eggshell Flatting Varnish	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	0
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	8	0
Brunswick Black	0	8	0
Berlin Black	0	10	0
Knotting	0	10	0
French and Brush Polish	0	10	6

BUILDING, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NO DATE.—**Nether Green.**—HOUSE.—Erection of a detached dwelling-house in Fulwood-road, Nether Green. Particulars of Mr. P. Blair Frost, architect and surveyor, Independent-buildings, Fargate.

NO DATE.—**St. Albans.**—DEMOLITION, ETC.—For demolition and removal of St Saviour's Parish Hall. Particulars of Messrs. Mence & Finn, architects, 11, St. Peter's-street, St. Albans.

FURNITURE, MATERIALS, etc.

APRIL 20.—**Hadleigh.**—GRANITE.—Supply to Hadleigh U.D.C. of 600 tons of 2-in Guernsey or Quenast granite. Mr. Harold W. F. Grimwade, Clerk, U.D.C. Office, Hadleigh, Suffolk.

APRIL 20.—**Littlehampton.**—ROAD MATERIALS.—Supply to the East Preston R.D.C. of 1,800 tons of granite and 2,690 cubic yds. of flints. Mr. Arthur Shelley, Clerk, Littlehampton.

APRIL 21.—**Hull.**—FURNITURE.—Furnishing and equipment of the new hospital for the Kingston-upon-Hull Incorporation for the Poor. Forms of tender of Mr. Robert H. Winter, Clerk to the Guardians, St. Mary's-chambers, Hull.

APRIL 22.—**Darlington.**—LORRY.—Supply of a 5-ton motor lorry, complete with end-tipping gear. Particulars from Mr. George Winter, Borough Surveyor, Town Hall, Darlington.

APRIL 22.—**Glasgow.**—MATERIALS.—Supply to Baths Department of plumbers' furnishings, brass furnishings, ironmongery, paints and varnish, joiner work, etc. Forms of tender of Mr. William Thomson, General Manager, 38, College-street.

APRIL 22.—**Sutton.**—MATERIALS.—Supply to the U.D.C. of Sutton of road materials, etc.; ironmongery, oils, paints, etc. Forms of tender of Mr. H. Bolton, Clerk to the Council, Municipal Offices, Sutton, Surrey.

* APRIL 23.—**Kensington.**—DECORATIVE WORK, ETC.—The Kensington Guardians invite tenders for the above work at the Infirmary.

APRIL 24.—**Middlewich.**—MATERIALS.—Supply to the U.D.C. of road materials, etc., also for paving and steam rolling. Forms of tender from the Council's Surveyor or Sanitary Inspector, Town Hall.

APRIL 25.—**Wigan.**—MATERIALS.—Supply of materials to the Corporation including Portland cement and lime, common bricks, stoneware pipes, gullies, etc., pitch and creosote oil, manhole and gully grates, iron and tools, timber, oils and paints, glass and glazing, ironmongery, grit setts, kerbstones, channel stones, flags, gravel, chippings, macadam. Forms of tender of the Borough Engineer and Surveyor, Mr. A. T. Gooseman, Municipal Offices, King-street West, Wigan.

APRIL 27. — **Blaenavon.** — ROAD MATERIALS.—Supply to the Blaenavon U.D.C. of 850 tons of broken limestone and 150 tons of limestone gravel. Forms of tender of Mr. E. W. Edwards, Surveyor to the Council, Council Offices, Blaenavon.

APRIL 27.—**Dublin.**—STORES.—Supply for eight months to the Dublin and South-Eastern Railway of stores. Specifications 6d. each, of Mr. A. G. Reid, Secretary, Secretary's Office, Westland-row Station, Dublin.

APRIL 27.—**Finsbury.**—PAVING.—For paving with creosoted deal on Portland cement concrete the carriageways of Cowcross-street (part) and Turnmill-street for the B.C. Specifications at the Borough Surveyor's Office, Finsbury Town Hall, E.C. Deposit, £1 1s.

APRIL 27. — **Glasgow.** — MATERIALS. — For materials for the Corporation Electricity Department, including fireclay bricks, ironmongery and engineers' furnishings, lime and cement, paints and varnishes, timber, etc. Forms of tender of Mr. W. W. Lackie, Engineer, 75, Waterloo-street.

APRIL 27.—**Hastings.**—WOOD BLOCKS.—Supply of 357,000 9-in. or 442,000 7-in. Jarrah wood paving blocks. Specification of the Borough Engineer, Mr. P. H. Palmer, M.Inst.C.E., Town Hall, Hastings.

APRIL 29.—**Belfast.**—SETTS.—Supply of about 280 tons of setts for the Harbour Commissioners. Specification from the Harbour Engineer, Mr. W. Redfern Kelly, M.Inst.C.E., Harbour Office, Belfast.

MAY 25.—**Finchley.**—MATERIALS.—Supply for one year to the Finchley U.D.C. of road materials, stoneware pipes and goods, etc. Forms of tender of Mr. E. H. Lister, Clerk of the Council, Council Offices, Church End, Finchley, N.

NO DATE.—**Bacup.**—CEMENT.—Supply to Corporation of cement during the ensuing twelve months. Form of tender of the Borough Engineer, Municipal Offices, Bacup.

NO DATE.—**Blackburn.**—WOOD-PAVING BLOCKS.—For 90,000 wood-paving blocks (creosoted redwood), size 9 in. by 4½ in. by 3 in. Specification of Mr. William Stubbs, A.M.Inst.C.E., Borough Engineer, Municipal Offices, Blackburn.

ENGINEERING, IRON, AND STEEL.

APRIL 20.—**Edinburgh.**—SWITCHBOARD.—Extension switchboard to specification No. 28, for the Corporation. Form of tender from Mr. Frank A. Newington, Engineer, Engineer's Office, Dewarplace, Edinburgh. Deposit, £2 2s.

APRIL 20.—**Keighley.**—BRIDGE.—For taking down the present old structure known as Holme Bridge and for the erection and completion of a new two-span bridge, for the Keighley R.D.C. Quantities of the engineers, Messrs. R. B. Broster & Sons, Craven Bank-chambers, Keighley. Deposit, £1 1s.

APRIL 20.—**Lockerbie.**—BRIDGE.—For the steelwork required in the renewal of the overbridge on the main line at 25 miles 60 chains, near Lockerbie, for the Caledonian Railway Company. Specifications of the Company's Engineer, Buchanan-street Station, Glasgow. Deposit, £2 2s.

APRIL 20.—**Walton-on-the-Naze.**—GROYNE.—For the construction of retaining walls, drains, and pavement to Burnt House Groyne. Quantities of Surveyor, Town Hall-buildings. Deposit, £2 2s.

APRIL 21.—**Dundee.**—GAS PLANT.—Supply and erection of the undernoted:—(*a*) Complete tar-distillation plant; (*b*) tar storage tank; (*c*) old boilers for storage; (*d*) steam boiler, for the Corporation. Form of tender of Mr. Alex. Yuill, Engineer and General Manager, Engineer's Office, Gasworks, Dundee.

APRIL 22.—**Manchester.**—HEATING.—Providing and fixing a low-pressure heating apparatus at the Municipal School of Domestic Economy, High-street, Chorlton-on-Medlock, Manchester. Quantities at the Education Offices, Deansgate, Manchester. Deposit, £1 1s.

APRIL 27.—**Melbourne.**—CRANES.—The Agent-General for Victoria, Australia, invites tenders for overhead travelling cranes for sub-stations and lifting tackle for power-station, for use in connection with the electrification of the Melbourne Suburban Railways, now being carried out. Specification from Messrs Merz & McLellan, consulting electrical engineers, 32, Victoria-street, Westminster, S.W.

APRIL 30.—**Chelmsford.**—PUMPING MACHINERY.—For provision and erection of a pumping installation, including suction-gas plant, at the waterworks of the Chelmsford Corporation. Specifications of Mr. P. T. Harrison, Borough Engineer, Municipal Offices, Chelmsford.

MAY 1.—**Llwyngwril.**—BRIDGE.—Supply and erection of a light steel road bridge, with masonry abutments, over the River Dysynni, near Llanllwyda, in the parish of Llanfihangel-y-Pennant, for the Dolgelley R.D.C. Specification, etc., of Mr. R. Foulkes-Jones, Clerk to the Council, Bank-buildings, Llwyngwril, S.O.

NO DATE.—**Cardiff.**—TANK.—For a brick and puddle gasholder tank, 180 ft. diameter by 34 ft. deep, to be constructed at Grangetown Gas Works, Cardiff. Specification of Mr. George Clarry, General Manager and Secretary, Gas Offices, Cardiff.

NO DATE.—**Plashetts.**—DRIFT.—Driving of a drift about 2,600 yds. long. Particulars of the Manager, Plashetts Colliery, Plashetts, Northumberland.

NO DATE.—**Port Talbot.**—PIT.—For deepening No. 1 pit a distance of about 200 yds., 20 ft. diameter in the clear, for the Imperial Navigation Collieries. Particulars of the Agent, Duffryn Rhondda Collieries, Cymmer, Port Talbot.

ROAD, SANITARY, AND WATER WORKS.

APRIL 20.—**Glasgow.**—STREET WORKS.—For the paving of several streets in the city with compressed rock asphalt for the Corporation. Specifications at the Office of Public Works, 64, Cochrane-street.

APRIL 21.—**Coseley.**—SEWERAGE.—For construction of 630 yds. of 9 in. earthenware pipe sewers in Millfields-road, for the U.D.C. Specification of the Surveyor, Council House, Coseley.

* APRIL 21.—**London.**—ROAD-MAKING.—The Corporation of London invite tenders for paving works in certain carriageways and footways.

APRIL 21.—**Rawmarsh.**—ROADS.—For making up of Ann-street for the U.D.C. Quantities of Mr. J. A. Tonge, Engineer, Council Offices, Rawmarsh. Deposit, 10s. 6d.

APRIL 21.—**Reigate.**—STREET WORKS.—For street improvements in Evesham-road and Evesham-road North. Quantities of the Borough Surveyor, Municipal-buildings, Reigate.

* APRIL 21.—**Willesden.**—ROAD-MAKING, ETC.—The Willesden U.D.C. invite tenders for road-making and paving works.

APRIL 22.—**Harpenden.**—KERBING.—Laying about 1,000 yds. run of kerbing on Luton-road, Harpenden, for the Hertfordshire C.C. Specification, etc., of Mr. Urban A. Smith, County Surveyor, Hatfield.

APRIL 23.—**Luton.**—STREET WORKS.—Private street works in Saxon-street, for the Corporation. Specifications of the Borough Surveyor.

APRIL 25.—**Failsworth.**—ASPHALTING.—Laying of about 1,777 super. yds. of asphalt at the cemetery, for the U.D.C. Form of tender of Mr. W. M. Shimmin, Engineer and Surveyor, Council Offices, Failsworth.

APRIL 27.—**Chertsey.**—SEWERAGE.—Extension of the Byfleet sewerage, for the Chertsey R.D.C. Specifications of the Engineers, Messrs. Elliott & Brown, A.M.Inst.C.E., Burton-buildings, Parliament-street, Nottingham. Deposit, £2 2s.

APRIL 27.—**Wandsworth.**—STREET WORKS.—REPAIRING.—(*a*) Part of Augustus-road, Southfield; and (*b*) part of Valley-road, Streatham. Specifications of the Borough Engineer, Mr. P. Dodd, M.Inst.C.E., at the office of the New Streets Department, No. 56, East-hill, Wandsworth, S.W. Deposit, £5 5s. in each case.

APRIL 27.—**Wandsworth.**—STREET WORKS.—Making-up and paving part of Khama-street, Balham. Specification of the Borough Engineer, Mr. P. Dodd, M.Inst.C.E., at the office of the New Streets Department, No. 56, East-hill, Wandsworth, S.W. Deposit, £5 5s.

APRIL 27.—**York.**—ROADS.—For the excavating of existing material of roadway, the laying of concrete foundation, and tar macadam surfacing, etc., on about 1¼ miles of main roads, for the Corporation. Quantities of Mr. F. W. Spurr, City Engineer, Guildhall, York. Deposit, £1 1s.

APRIL 28.—**Llandaff.**—STREET WORKS.—Flagging footpaths in Whitchurch-road, Gabalfa, in the parish of Llandaff, for the Llandaff and Dinas Powis R.D.C. Quantities of the Surveyor, Mr. James Holden, A.M.Inst.C.E., Park House, 20, Park-place, Cardiff.

APRIL 29.—**Isle of Wight.**—WATERWORKS.—Providing and laying of about 9 miles of 2-in., 3-in., and 4-in. cast-iron mains, etc., for the Isle of Wight R.D.C. Quantities of the Engineer, Mr. W. Phelps, C.E., Charlton-road, Shepton Mallet, Somerset. Deposit, £2 2s.

APRIL 30.—**Llantrisant.**—BURIAL-GROUND.—Laying-out a burial-ground at Cefn-y-Parc, Llantrisant, for the P.C. Quantities of Mr. Gomer S. Morgan, Engineer, 23, Gelliwastad-road, Pontypridd. Deposit, £5.

MAY 4.—**Whitworth.**—PAVING, ETC.—The Tramways Committee invite tenders for the paving, etc., of various lengths of main road. Quantities, etc., at the District Surveyor's Office, Council Offices, Facit, near Rochdale. Deposit, £10.

* MAY 12.—**Colchester.**—TARPAVED ROADS.—The Committee of Visitors of the Essex and Colchester Lunatic Asylums invite tenders for the above work.

MAY 12.—**St. Mellons.**—ROADS.—For widening and improving Lighthouse-road, between Ebbw Bridge and Sutton Farm, St. Brides, including the construction of steel and concrete bridges, laying stoneware pipe culverts, the erection of post and tube fencing, for the St. Mellons R.D.C. Quantities of Mr. A. H. Rees, Clerk, Union Offices, Queen's-hill, Newport, Mon. Deposit, £3 3s.

Public Appointments.

* APRIL 21. — SURVEYING ASSISTANTS. — The Shanghai Municipal Council invite applications for the above post. Salary, about £385 per annum.

* APRIL 25.—GENERAL ASSISTANT.—The Hove Corporation invite applications for the above post. Salary, £104 per annum.

* NO DATE.—ASSISTANT QUANTITY SURVEYOR.—The Durham C.C. invite applications for the above post. Commencing salary, £100 per annum.

Auction Sales.

* APRIL 23.—**Forest Hill.**—Messrs. Hatch & Hatch will sell by auction, on the site, a quantity of building material.

* APRIL 29.—Messrs. Churchill & Sim will sell by auction, at the Great Hall, Winchester House, Old Broad-street, E.C., an assortment of deals, battens, boards, timbers, etc.

* APRIL 30.—**Clapham and Brixton.**—Messrs. Edwin Evans & Sons will sell by auction, at Clapham Junction, several freehold residences.

* APRIL 30.—**Gravesend.**—Messrs. Farebrother, Ellis, & Co. will sell by auction, at the Mart, a freehold estate.

* APRIL 30.—**Kent.**—Messrs. Farebrother, Ellis, & Co. will sell by auction, at the Mart, a freehold building estate.

* MAY 7.—**Barnes Common.**—Messrs. Knight, Frank, & Rutley will sell by auction, at 20, Hanover-square, W., the Vine Cottage Estate.

* MAY 7.—**Sudbury.**—Messrs. Walton & Lee will sell by auction, at 20, Hanover-square, W., freehold plots.

* JUNE 16.—**Blackfriars.**—Messrs. D. Smith, Son, & Oakley will sell by auction, at the Mart, a freehold wharf.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to THE BUILDER LTD., and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples sent to or left at the office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

[Those with an asterisk (*) are advertised in this issue.]

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the average prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River.	£	s.	d.
Best Stocks	1	16	0
Picked Stocks for Facings	2	10	0

Per 1000, Delivered at Railway Depôt.

	£	s.	d.		£	s.	d.
Flettons	1	14	0	Best Blue Pressed Staffordshire	2	15	0
Red Farnham Red	3	12	0	Do. Bullnose	4	0	0
Best Red Pressed Ruabon Facing	5	0	0	Best Stourbridge Fire Bricks	4	0	0

GLAZED BRICKS—

Best White, Ivory, and Salt Glazed Stretchers	12	7	6	Double Headers	14	17	6
Headers	11	17	6	One Side and one End	14	17	6
Quoins, Bullnose and 4½ in. Flats	15	17	6	Two Sides and one End	19	17	6
D'ble Str'ch'rs	17	17	6	Splays and Squints	17	7	6

Second Quality £1 10s. per 1000 less than best.

	£	s.	d.	
Thames and Pit Sand		7	0	per yard, delivered.
Thames Ballast		5	9	" "
Best Portland Cement		37	6	per ton, "
Best Ground Blue Lias Lime		20	0	" "

NOTE—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime	14s. 0d. per yard delivered.
Shortridge Fireclay in sacks	27s. 0d. per ton at rly. dpt.

STONE.

Per Ft. Cube.

	s.	d.
BATH STONE—delivered on road waggons, Paddington Depôt	1	7½
Do. do. delivered on road waggons, Nine Elms Depôt	1	9½

PORTLAND STONE (20 ft. average)—

	s.	d.
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	4½
White Basebed, delivered on road waggons Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	6½

Per Ft. Cube, delivered at Railway Depôt.

	s.	d.		s.	d.
Ancaster in blocks	1	10	Closeburn Red Freestone	2	0
Beer in blocks	1	8			
Greenmill in blocks	1	10	Red Mansfield Freestone	2	4
Darley Dale in blocks	2	4	Talacre & Gwespyr Stone	2	4
Red Corsehill in blocks	2	3			

YORK STONE—*Robin Hood Quality.*

Per Ft. Cube, Delivered at Railway Depôt.	s.	d.
Supplied random blocks	2	10

Per Ft. Super., Delivered at Railway Depôt.

	s.	d.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8
6 in. rubbed two sides ditto, ditto	2	6
1 in. sawn two sides slabs (random sizes)	0	11½
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7
1½ in. to 2 in. ditto, ditto	0	8

RAG YORK—

Per Ft. Cube, Delivered at Railway Depôt.	s.	d.
Supplied random blocks	2	0

Per Ft. Super., Delivered at Railway Depôt.

	s.	d.
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2	8
6 in. rubbed two sides ditto	3	0
6 in. sawn two sides slabs (random sizes)	1	2
2 in. self-faced random flags	0	5

SLATES.

Per 1000 of 1200 at Railway Depôt.

In. in.	£	s.	d.	In. in.	£	s.	d.
20 x 10 best blue Bangor	13	2	6	20 x 10 best Eureka unfading green	15	17	6
24 x 12 ditto	13	17	6	20 x 12 ditto	18	7	6
24 x 10 1st q'lity ditto	13	0	0	18 x 10 ditto	13	5	0
20 x 12 ditto	13	15	0	16 x 8 ditto	10	5	0
16 x 8 ditto	7	5	0	20 x 10 permanent green	11	12	6
22 x 10 best blue Portmadoc	12	12	6	18 x 10 ditto	9	12	6
16 x 8 ditto	6	12	6	16 x 8 ditto	6	12	6

TILES.

At Railway Depôt.

	s.	d.		s.	d.
Best plain red roofing (per 1000)	42	0	Best "Hartshill" brand, plain sand-faced (per 1000)	45	0
Hip and Valley (per doz.)	3	7	Do. pressed (per 1000)	42	6
Best Broseley (per 1000)	50	0	Do. Ornamental (per 1000)	47	6
Do. Ornamental (per 1000)	52	6	Hip (per doz.)	4	0
Hip and Valley (per doz.)	4	0	Valley (per doz)	3	6
Best Ruabon red, brown, or brindle (Hav'ds) (per 1000)	57	6	Staffords. (Hanley) Reds or Brindled (per 1000)	42	6
Do. Ornamental (per 1000)	60	0	Hand-made sand-faced (per 1000)	45	0
Hip (per doz.)	4	0	Hip (per doz.)	4	0
Valley (per doz.)	3	0	Valley (per doz)	3	6

WOOD.

BUILDING WOOD.	At per standard.					
	£	s.	d.		£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	15	0	0	..	16	10	0
Deals: best 3 in. by 9 in.	15	0	0	..	16	0	0
Battens: best 2½ in. by 7 in. and 3 in., and 3 in. by 7 in. and 3 in.	12	10	0	..	13	10	0
Battens: best 2½ by 6 and 2 by 6	0	10	0		less than 7 in. and 6 in.		
Deals: seconds	1	0	0		less than best		
Battens: seconds	0	10	0		"		
2 in. by 4 in. and 2 in. by 6 in.	11	10	0	..	12	10	0
2 in. by 4½ in. and 2 in. by 5 in.	10	10	0	..	11	10	0
Foreign Sawn Boards—							
1 in. and 1¼ in. by 7 in.	0	10	0		more than battens.		
¾ in.	1	0	0		"		
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft.						
	5	0	0	..	6	5	0
Seconds	4	10	0	..	5	0	0
Small timber (8 in. to 10 in.)	3	17	6	..	4	0	0
Small timber (6 in. to 8 in.)	3	5	0	..	3	10	0
Swedish balks	2	12	6	..	3	0	0
Pitch-pine timber (50 ft. average)	6	0	0	..	7	0	0

JOINERS' WOOD.	At per standard.					
	£	s.	d.		£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	26	0	0	..	27	0	0
3 in. by 9 in.	24	0	0	..	25	0	0
Battens, 2½ in. and 3 in. by 7 in.	18	10	0	..	19	10	0
Second yellow deals, 3 in. by 11 in.	21	10	0	..	22	10	0
Do. 3 in. by 9 in.	20	0	0	..	21	0	0
Battens, 2½ in. and 3 in. by 7 in.	15	0	0	..	16	0	0
Third yellow deals, 3 in. by 11 in. and 9 in.	16	0	0	..	17	0	0
Battens, 2½ in. and 3 in. by 7 in.	14	0	0	..	15	0	0
Petersburg: first yellow deals, 3 in. by 11 in.	23	0	0	..	24	0	0
Do. 3 in. by 9 in.	20	0	0	..	21	0	0
Battens	15	0	0	..	16	0	0
Second yellow deals, 3 in. by 11 in.	17	10	0	..	18	10	0
Do. 3 in. by 9 in.	16	0	0	..	17	0	0
Battens	12	10	0	..	13	10	0
Third yellow deals, 3 in. by 11 in.	14	0	0	..	15	0	0
Do. 3 in. by 9 in.	13	10	0	..	14	10	0
Battens	11	10	0	..	12	10	0
White Sea and Petersburg—							
First white deals, 3 in. by 11 in.	16	10	0	..	17	10	0
First white deals, 3 in. by 9 in.	14	10	0	..	15	10	0
Battens	13	0	0	..	13	10	0
Second white deals, 3 in. by 11 in.	14	10	0	..	15	10	0
Second white deals, 3 in. by 9 in.	13	0	0	..	14	0	0
Battens	12	0	0	..	12	10	0
Pitch-pine: deals	25	0	0	..	26	10	0
Under 2 in. thick extra	0	10	0	..	1	0	0
Columbian or Oregon Pine, best quality	23	10	0	..	26	0	0
Yellow Pine — First, regular sizes	50	0	0		upwards.		
Oddments	35	0	0		"		
Seconds, regular sizes	36	0	0		"		
Oddments	31	0	0		"		
Kauri Pine—Planks per ft. cube	0	5	6	..	0	6	6
Danzig and Stettin Oak Logs—Large, per ft. cube	0	3	0	..	0	3	9
Small " "	0	2	6	..	0	3	0
Wainscot Oak Logs, per ft. cube	0	7	6	..	0	9	0
Dry Wainscot Oak, per ft. super. as inch	0	0	10	..	0	1	2
¾ in. do. do.	0	0	9	..	0	1	0
Dry Mahogany — Honduras, Tabasco, per ft. super, as inch	0	0	10	..	0	1	3
Selected, Figury, per ft. super. as inch	0	1	6	..	0	2	6
Cuba Mahogany	0	1	4	..	0	2	6
					upwards		
Dry Walnut, American, per ft. super, as inch	0	0	10	..	0	1	2
French "Italian" Walnut	0	0	10	..	0	1	4
Teak, per load (Rangoon or Moulmein)	20	10	0	..	26	0	0
Do., do. (Java)	19	0	0	..	22	10	0
American Whitewood planks, per ft. cube	0	5	6	..	0	6	6

Prepared Flooring, etc.—	Per square.					
	£	s.	d.		£	s.	d.
1 in. by 7 in. yellow, planed and shot	0	14	6	..	0	18	0
1 in. by 7 in. yellow, planed and matched	0	14	9	..	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	17	6	..	1	3	0
1 in. by 7 in. white, planed and shot	0	14	0	..	0	16	0
1 in. by 7 in. white, planed and matched	0	14	3	..	0	16	6
1¼ in. by 7 in. white, planed and matched	0	16	6	..	0	8	6
¾ in. by 7 in. yellow, matched and beaded or V-jointed boards	0	12	6	..	0	15	0
1 in. by 7 in. " "	0	15	0	..	0	18	6
¾ in. by 7 in. white " "	0	12	0	..	0	14	0
1 in. by 7 in. " "	0	14	6	..	0	16	6

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.	In London or delivered Railway Vans, per ton.					
	£	s.	d.		£	s.	d.
Rolled Steel Joists, ordinary sections	9	0	0	..	10	0	0
Compound Girders, ordinary sections	11	0	0	..	12	0	0
Steel Compound Stanchions	12	0	0	..	13	0	0

JOISTS, GIRDERS, &c. (continued).	In London or delivered Railway Vans, per ton.					
	£	s.	d.		£	s.	d.
Angles, Tees, and Channels, ordinary sections	11	0	0	..	12	0	0
Flitch Plates	11	0	0	..	12	0	0
Cast Iron Columns & Stanchions, including ordinary patterns	8	10	0		9	0	0

METALS.

IRON—	Per ton, in London.					
	£	s.	d.		£	s.	d.
Common Bars	9	0	0	..	9	10	0
Staffordshire Crown Bars, good merchant quality	9	5	0	..	9	15	0
Staffordshire "Marked Bars"	11	0	0	..	—		
Mild Steel Bars	9	5	0	..	9	15	0
Hoop Iron, basis price	10	0	0	..	—		
" Galvanised	17	10	0	..	—		

* And upwards, according to size and gauge.

Sheet Iron Black—						
Ordinary sizes to 20 g.	10	5	0	..	—	
" " 24 g.	11	5	0	..	—	
" " 26 g.	12	15	0	..	—	
Sheet Iron, Galvanised, flat, ordinary quality—						
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	10	0	..	—	
Ordinary sizes to 22 g. and 24 g.	16	0	0	..	—	
Ordinary sizes to 26 g.	17	0	0	..	—	
Sheet Iron, Galvanised, flat, best quality—						
Ordinary sizes to 20 g.	18	10	0	..	—	
" " 22 g. and 24 g.	19	0	0	..	—	
Ordinary sizes to 26 g.	20	10	0	..	—	
Galvanised Corrugated Sheets—						
Ordinary sizes, 6 ft. to 8 ft. 20 g.	15	0	0	..	—	
Ordinary sizes, 22 g. and 24 g.	15	5	0	..	—	
Ordinary sizes, 26 g.	16	15	0	..	—	
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	10	0	..	—	
Best Soft Steel Sheets, 22 g. & 24 g.	13	10	0	..	—	
Best Soft Steel Sheets, 26 g.	15	10	0	..	—	
Cut Nails, 3 in. to 6 in.	11	0	0	..	11	10	0

(Under 3 in., usual trade extras.)

LEAD, &c. Delivered in London.	£	s.	d.	
LEAD—Sheet, English, 4 lb. and up	21	10	0	.. —
Pipe in coils	22	0	0	.. —
Soil pipe	25	0	0	.. —
Compo pipe	25	0	0	.. —
ZINC—Sheet—	In casks of 10 cwt.			
Vieille Montagne	28	5	0	.. —
Silesian	28	10	0	.. —

Zinc, in bundles, 1s. per cwt. extra.

COPPER—					
Strong Sheet	per lb.	0	1	1	.. —
Thin "	"	0	1	2	.. —
Copper nails	"	0	1	0	.. —
Copper wire	"	0	1	0	.. —
BRASS—					
Strong Sheet	"	0	1	0	.. —
Thin	"	0	1	1	.. —
TIN—English Ingots	"	0	1	10	..
SOLDER—Plumbers'	"	0	0	10	.. —
Tinmen's	"	0	1	1	.. —
Blowpipe	"	0	1	3	.. —

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*

Per Ft. Delivered.

15 oz. thirds	2½d.	26 oz. fourths	3½d.
" fourths	2¾d.	32 oz. thirds	5½d.
21 oz. thirds	3½d.	" fourths	4½d.
" fourths	3¾d.	Fluted Sheet, 15 oz.	3½d.
26 oz. thirds	4½d.	" 21 oz.	4d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*

Per Ft. Delivered.

¼ Rolled plate	2¼d.
¼ Rough rolled and rough cast plate	2¼d.
½ Rough rolled and rough cast plate	3d.
Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white	3½d.
Ditto, tinted	5d.

* Not less than two crates.

OILS, &c.

		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	2	3
" " " in barrels	"	0	2	4
" " " in drums	"	0	2	6
Boiled " " in barrels	"	0	2	6
" " " in drums	"	0	2	9
Turpentine in barrels	"	0	2	9
" in drums	"	0	2	11
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		29	15	0
Red Lead, Dry	per ton	28	0	0
Best Linseed Oil Putty	per cwt.	0	9	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.

	Per gallon.		
	£	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	9
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	6
Extra Pale French Oil	1	1	0
Eggshell Flatting Varnish	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	0
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	6
French and Brush Polish	0	10	0

TERMS OF SUBSCRIPTION.

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TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us not later than 6 p.m. on Wednesday. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100l. unless in some exceptional cases and for special reasons.]

*Denotes accepted. †Denotes provisionally accepted.

ASHBY-DE-LA-ZOUCH.—For sewage lift at Botts Hollow, for the Urban District Council:—
Adams Hydraulics, Ltd.* £370

BEDWAS.—For erection of Council Offices, for the Bedwas and Machen Urban District Council:—
E. James, Ystradmynach* £2,286

BLABY.—Alterations at Workhouse, for the Board of Guardians:—
Bingley, Littletherpe* £230 4 2½

BLETCHLEY.—For house at Bletchley, Bucks, for Mr. W. A. Foll. Mr. W. B. Stonebridge, architect, Bedford and Woburn Sands:—
Howard Bros. £636
Dawes & Bowler 587
T. Yirrell, Leighton* .. £559

BURTON-ON-TRENT.—For alterations at the Infirmary, for the Board of Governors:—
T. Lowe & Sons* £5,845

BURTON-ON-TRENT.—For installation of heating apparatus at the Infirmary:—
Messenger & Sons £940

CANNOCK.—For making Western-road, West Hill-avenue, Reservoir-road, New-street, and Pump-street, Hednesford, and New Hall-street, Cannock, for the Urban District Council:—

	Making.	Kerbing, etc.
Jukes & Co.*	£1,147 17 11	£1,487

DUNFERMLINE.—For first section of the West Fife water scheme, for Dunfermline District Committee:—
W. Tawse, Aberdeen* £28,435

GILLINGHAM.—Erection of workmen's dwellings (eight houses), at Wood-street, Old Brompton, for the Town Council:—
West Bros. £1,269 0 0
T. Cornelius & Son 1,209 10 0
H. E. Phillips 1,197 0 0
W. T. Burrows 1,165 0 0
G. W. Ellingham £1,153 0 0
G. Gates & Son 1,135 0 0
Redfern (Borough Surveyor)* 992 13 1

GODALMING.—Erection of new church room, Godalming:—
D. Fry* £1,500

GRIMSBY.—Erection of convenience at Welholme Crossing, for the Corporation:—
D. Seamer* £294

GRIMSBY.—Conversion of 7 and 9, East Marsh-street into conveniences, for the Corporation:—
Borrill & Cheeseman* £435

WESTMINSTER.—The City Council has accepted the following tenders for paving of various streets:—

Streets A.	Proposed Pavement.	Contractor.	Totals. £ s. d.
Bruton-place, Charlwood-street, Graham-street, Old Pye-street, Orchard-street (part), Richmond-buildings, St. George's-road, and Vane-street	Asphalt	London Asphalte Co., Ltd.	3,921 15 0
Bedford-street, Brick-street, Grosvenor-gardens, Orchard-street (part), and Sackville-street	Wood ...	Acme Flooring and Paving Co., Ltd.	3,635 14 2
Chesterfield-street	Wood ...	W. Griffiths & Co., Ltd. ...	605 6 8
Charing Cross, Hyde Park-corner, Leicester-square, Regent-street, Strand, and Surrey-street	Wood ...	Improved Wood Pavement Co., Ltd.	2,913 4 2
South-street, and Vincent-square	Wood ...	J. Mowlem & Co., Ltd. ...	3,451 4 2

ISLINGTON.—For paving works in Blackstock-road and Highbury Park, for the Islington Borough Council:—
G. Wimpey & Co. £7,790 5 2
Acme Flooring and Paving Co. (1904), Ltd. 7,191 0 7
G. J. Anderson 7,071 13 8
J. Mowlem & Co., Ltd. 7,069 18 10
W. Manders & Co. 6,909 8 7
W. Griffiths & Co., Ltd., Bishopsgate* 6,676 16 8

LEYTON.—For realating the roof at public baths. Mr. W. Dawson, Surveyor, Urban District Council Offices, Leyton:—
Kind & Co. £305 12 6
J. Williams & Co. 289 19 0
H. Nethercot & Co. 271 5 10
E. A. Russell 265 0 0
Tribe & Co. 256 17 6
C. J. Sherwood 244 14 3
E. Mathews & Co. 240 0 0
A. W. Allard & Co. £225 16 10
F. J. Coxhead 220 10 0
J. J. Etridge, jun., Ltd. 213 12 3
Young & Son 202 1 8
J. E. Fuller 197 0 0
Ellis, Partridge, & Co. 194 11 0

OSWESTRY.—For erection of park lodge, for the Corporation:—
Jones & Evans* £318

READING.—For alterations at the Crown Hotel, Caversham. Mr. J. Haslem, architect:—
Collier & Catley £1,839
J. H. Margetts & Son 1,798
F. Newberry £1,650
G. S. Lewis & Bro. 1,548
[Awaiting decision.]

READING.—For sewerage and surface water drainage in Tilehurst:—
Langley & Johnson* £14,672 15 11

RUISLIP-NORTHWOOD.—For construction of roads, paths, sewers, and subsoil drainage in connection with the laying out of the cemetery, recreation ground, and allotments. Mr. W. L. Cary, Surveyor, Urban District Council Offices, Northwood:—
A. Wooster, Wealdstone £2,513 19 5

SOUTH SHIELDS.—For erection of a tuberculosis dispensary at the Municipal Buildings, Westoe-road. Mr. L. Rosevears, A.M.Inst.C.E., South Shields:—
S. Sheriff & Sons, Back Woodbine-street, South Shields £980 6 9

WATFORD.—For making up Part 1 of Willow-lane. Mr. C. Waterhouse, Surveyor, Urban District Council Offices, Watford:—
Bracey & Clarke, 129, Leavesden-road, Cecil-street, Watford* £510

WORTHING.—For sewage works, for the Corporation:—
A. G. Osenton, Horsham* £3,193 3

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